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# bart impact program

## ASSESSMENT OF THE IMPACTS OF THE AC TRANSIT STRIKE UPON BART



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The BART Impact Program is a comprehensive, policy-oriented study and evaluation of the impacts of the San Francisco Bay Area's new rapid transit system (BART).

The program is being conducted by the Metropolitan Transportation Commission, a nine-county regional agency established by state law in 1970.

The program is financed by the U. S. Department of Transportation, the U. S. Department of Housing and Urban Development, the National Science Foundation, and the California Department of Transportation. Management of the Federally-funded portion of the program is vested in the U. S. Department of Transportation.

The BART Impact Program covers the entire range of potential rapid transit impacts, including impacts on traffic flow, travel behavior, land use and urban development, the environment, the regional economy, social institutions and life styles, and public policy. The incidence of these impacts on population groups, local areas, and economic sectors will be measured and analyzed. The benefits of BART, and their distribution, will be weighed against the negative impacts and costs of the system in an objective evaluation of the contribution that the rapid transit investment makes toward meeting the needs and objectives of this metropolitan area and all of its people.



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ASSESSMENT OF THE IMPACTS  
OF THE AC TRANSIT STRIKE  
UPON BART



FEBRUARY 1975

TECHNICAL MEMORANDUM

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PREPARED FOR

U.S. DEPARTMENT OF TRANSPORTATION

OFFICE OF TRANSPORTATION PLANNING ASSISTANCE AND  
URBAN MASS TRANSPORTATION ADMINISTRATION  
400 7TH STREET, S.W.  
WASHINGTON, D.C. 20590

The preparation of this report has been financed in part through a grant from the U.S. Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended.

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## Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle		5. Report Date	6. Performing Organization Code
Assessment of the Impacts of the AC Transit Strike upon BART		February 1975	043-00087-40-1
7. Author(s)		8. Performing Organization Report No.	
Stephen G. Cohn, Raymond H. Ellis		TM 11-3-75	
9. Performing Organization Name and Address		10. Work Unit No. (TRIS)	11. Contract or Grant No. DOT-OS-30176
*Peat, Marwick, Mitchell & Co. and Metropolitan Transportation Commission		Task Order #3	CA-09-0025, CA-09-0042
12. Sponsoring Agency Name and Address		13. Type of Report and Period Covered	
Office of Transportation Planning Assistance Urban Mass Transportation Administration U.S. Department of Transportation 400 Seventh St., S.W., Washington, D.C. 20596		Technical Memorandum	
15. Supplementary Notes		14. Sponsoring Agency Code	
*The Metropolitan Transportation Commission (MTC), Hotel Claremont, Berkeley, California 94705, is the prime contractor for the BART Impact Program. Peat, Marwick, Mitchell & Co., 1777 Murchison Drive, Burlingame, California 94010, is the subcontractor to MTC responsible for the Transportation System and Travel Behavior Project.			
16. Abstract			
<p>The Alameda-Contra Costa Transit District (AC Transit) and the Bay Area Rapid Transit District (BART) provide bus and rapid rail public transportation, respectively, on the east side of San Francisco Bay. On July 1, 1974, AC Transit employees began a strike that was to last 62 days. This study assesses the impacts of the strike on BART travel, on travel between the east side of the Bay and San Francisco, and on the travelers who normally used AC Transit.</p>			
17. Key Words		18. Distribution Statement	
Bay Area Rapid Transit System (BART), BART Impact Program, transit strike, public transportation, mass transit, bus transit, rail rapid transit, travel behavior, urban transportation		Document is available to the public through the National Technical Information Service, Springfield, Virginia 22151	
19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified		



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ASSESSMENT OF THE IMPACTS OF  
THE AC TRANSIT STRIKE UPON BART

TRANSPORTATION SYSTEM AND TRAVEL BEHAVIOR PROJECT  
BART IMPACT PROGRAM

DOCUMENT NUMBER TM 11-3-75  
PREPARED BY PEAT, MARWICK, MITCHELL & CO.  
UNDER CONTRACT WITH THE METROPOLITAN TRANSPORTATION COMMISSION  
FOR THE U.S. DEPARTMENT OF TRANSPORTATION, OFFICE OF TRANSPORTATION  
PLANNING ASSISTANCE, AND URBAN MASS TRANSPORTATION ADMINISTRATION  
UNDER CONTRACT DOT-OS-30176, TASK ORDER 3,  
AND GRANTS CA-09-0025 AND CA-09-0042  
FEBRUARY 1975



## BAY AREA RAPID TRANSIT SYSTEM

PEAT, MARWICK, MITCHELL & CO.  
SAN FRANCISCO

## SUMMARY

### Introduction

The Alameda-Contra Costa Transit District (AC Transit) and the Bay Area Rapid Transit District (BART) provide complementary public transportation services to large sections of Alameda and Contra Costa Counties. AC Transit provides bus service to an area of about 200 square miles with a population of 950,000 extending from Richmond to Hayward and from San Francisco Bay to the Berkeley Hills. On an average day in late June 1974, about 200,000 trips per day were made on AC Transit--65,000 of these were transbay, 15,000 were for access to BART, and the remaining 120,000 were made solely on AC Transit within its service area on the east side of San Francisco Bay.

Three BART lines--the Fremont, Concord, and Richmond lines--also serve Alameda and Contra Costa Counties (henceforth referred to as the East Bay). Approximately 18 of the 25 BART stations in these counties are located within the AC Transit service area. Seven stations on the Concord and Fremont lines are located in areas which were not served by AC Transit in late June 1974. At that time, approximately 42,000 trips per day were made on these three BART lines; about 74% or 31,000 of these trips exited from BART at the 28 stations located within the AC Transit service area. About 7,500 (or 25%) of these exiting BART patrons transferred to local AC Transit buses and an additional 1,500 (or 5%) transferred to transbay AC Transit buses at the MacArthur BART Station.

On July 1, 1974, AC Transit employees began a strike that was to last for 62 days. All AC Transit services ceased operation during the strike and its 200,000 daily riders were required to make alternative travel choices. This study was designed to examine selected travel impacts of the AC Transit strike, with particular emphasis upon the travel relationships between BART and AC Transit and the impacts of the strike upon various groups of travelers. The study was not intended as an overall assessment of the impacts of the AC Transit strike upon the community.

During the strike, only two BART services were in operation in Alameda and Contra Costa Counties--Richmond-Fremont and Concord-MacArthur; transfers between these services were accomplished at the MacArthur BART Station. Transbay BART service was not initiated until September 16, 1974--16 days after the settlement of the strike.

### Strike Impacts on BART Travel

During the strike, net daily patronage of the three East Bay BART lines increased by about 2,600 trips or 7%. Contrastingly, average daily East Bay BART revenues during the strike declined about 4% from \$22,600 to \$21,600. This revenue reduction was a result of an 11% decrease in the average BART

fare during the strike from \$0.56 to \$0.50--a consequence of the loss of longer distance BART riders on the Concord line and the gain of shorter distance riders on the Richmond and Fremont lines.

The AC Transit strike affected BART patronage for two reasons:

- The cessation of feeder bus service at BART stations and transbay bus service at MacArthur Station tended to reduce BART travel.
- The cessation of AC Transit service on routes parallel to BART resulted in former bus travelers diverting to BART as an alternative mode.

A personal interview survey of feeder bus users conducted at four BART stations immediately after the strike indicated that during the strike, their travel times and travel costs had increased and that they had been required to reschedule their trips. Further, these travelers made the following alternative travel choices:

- 51% continued to use BART--the major access mode was walking with automobile second
- 35% suppressed their trip altogether
- 14% diverted to another mode--principally automobile--for the entire trip.

Expanding the 49% BART patronage loss due to the cessation of AC Transit feeder bus service to the approximately 15,000 feeder bus users at the 18 BART stations within the AC Transit service area and assuming that 2,000 daily BART travelers used AC Transit for both access to and egress from BART, suggests that BART lost approximately 6,500 daily person trips as a result of the cessation of AC Transit feeder bus service.

BART patronage also decreased by about 3,000 daily trips due to the cessation of transbay AC Transit bus service at MacArthur Station. Assuming that 10% of these trips were already lost because of the absence of feeder bus service, suggests that BART daily patronage further decreased by 2,700 daily person trips because of the absence of transbay bus service.

Based on the above, about 9,200 travelers who normally used BART ceased doing so during the AC Transit strike. However, BART patronage figures indicate that patronage actually increased during the strike by 2,800 daily trips. Those results suggest that about 12,000 travelers who normally used AC Transit diverted to BART during the strike. This is about 10% of the daily prestrike AC Transit ridership of 120,000 which was neither transbay nor feeder to BART.

A personal interview survey of riders on bus routes parallel to BART conducted at six locations in downtown Oakland immediately after the strike indicated that during the strike, about 35% of the total trips were suppressed. Further, these travelers indicated that while their travel times decreased, their travel costs increased substantially, causing them significant hardship.

Based on these results, it appears that for trips which were neither transbay nor feeder to BART, the alternative travel choices of the 120,000 daily riders on AC Transit were as follows:

- 10% diverted to BART--the major access mode was walking with automobile second.
- 35% suppressed all trips.
- 55% diverted to other modes--principally automobile, although there were a reasonable number of walking and hitchhiking trips.

#### Strike Impacts on Transbay Travel

Prior to the strike, about 65,000 daily transbay trips were made on AC Transit. As noted, transbay BART service was not available during the strike. An on-board mail-back survey of 2,000 transbay bus riders was conducted eight weeks after the strike and six weeks after the initiation of transbay bus service. Respondents to this survey indicated that during the strike, they made the following travel choices:

- 14% suppressed their trip altogether
- 86% diverted to automobile (26% had driven alone and 60% had traveled by car with other people)

During the strike, average daily westbound vehicle trips on the San Francisco-Oakland Bay Bridge (Bay Bridge) increased by about 6% from 92,600 to 98,500. Vehicle traffic during the morning peak (6 a.m. - 9 a.m.) increased 12% from 22,000 to 24,700 vehicles. Traffic congestion and delays on the Bay Bridge increased significantly during the strike, particularly during the peak periods. Daily delay due to traffic congestion on the Bay Bridge between 6 a.m. and 9 a.m. increased 500% to 10,800 person-hours per day and the period of peak traffic congestion increased from about 30 minutes between 7:00 a.m. and 7:30 a.m. to 120 minutes between 6 a.m. and 8 a.m.

As a result of the massive traffic congestion during the peak periods on the Bay Bridge, some automobile traffic was diverted to other bridges. Average daily westbound vehicle trips on the San Mateo-Hayward Bridge increased about 15% from 14,800 to 17,100 and travel during the morning peak between 6 a.m.

and 9 a.m. increased 37% from 3,700 to 5,100. Traffic on the Richmond-San Rafael Bridge increased to a lesser extent; average daily westbound traffic on this bridge increased about 6% from 10,800 to 11,500. In total, average daily westbound vehicle trips across the Bay increased by 8,900 (or 7.5%) during the strike.

Greyhound patronage increased from 4,700 to 5,300 daily trips (or 13%) in the westbound direction from the Concord/Walnut Creek/Orinda corridor to San Francisco. It is believed that most of the riders diverting to Greyhound had previously used BART and transferred to transbay AC Transit buses at the MacArthur Station.

#### Incidence of the Strike Impacts

About 46% to 59% of the nonwork trips which were normally made on AC Transit were not undertaken during the strike. This trip suppression was largely the result of the unavailability of a feasible alternative mode of travel. About 9% to 21% of the work trips normally made on AC Transit were also suppressed during the strike. Thus, during the strike, the suppression rate for nonwork trips was significantly greater than the suppression rate for work trips. About 65% of all nonwork travel on AC Transit is undertaken by the elderly and the young.

Strike impacts on the elderly were particularly severe. About 55% to 60% of the trips of elderly respondents to the surveys were suppressed during the strike, almost twice the average trip suppression rate for travelers. About 79% of the elderly respondents to the survey of riders on bus routes parallel to BART did not have an automobile available or did not possess a valid driver's license. The majority of all former bus travelers using BART during the strike walked to the BART stations. This option was less feasible for the elderly because of their physical limitations.

With their limited incomes, the elderly found that the alternative transportation services were too expensive. About 30% of the elderly respondents to the surveys identified the extra cost of the alternative transportation service as a major problem resulting from the strike, about twice the rate at which this problem was identified on the average. Since the principal alternative travel modes--automobile or walking to BART--were either infeasible or too expensive, the elderly were forced to suppress their trips.

The young were also strongly affected by the strike. Fifty percent of the trips of the young respondents to the feeder route survey were suppressed. As in the case of the elderly, the young generally had a lower automobile availability than the general population. In contrast to the elderly, however, the young had the physical ability to walk to the BART stations, if walking access was at all feasible.

## Conclusions

Based on these findings, the following conclusions can be developed:

- If feeder bus service to BART ceases to operate, about half of the riders who formerly used the feeder bus service will no longer use BART. If a significant proportion of the BART riders use the feeder bus, therefore, a cessation of feeder bus service would result in a measurable decrease in BART ridership.
- During the AC Transit strike, BART functioned as an alternative transportation service for about 10% of the travelers who normally used AC Transit buses. Inasmuch as the preponderance of the AC Transit service area is beyond reasonable walking distance from the BART stations, use of BART as an alternative for AC Transit was constrained by the unavailability of an access mode to BART during the strike.
- Essentially, all travelers who normally use AC Transit were adversely affected by the strike. In particular, the travel costs of those who normally used AC Transit for their entire trip increased significantly. The strike impacts upon the elderly were particularly severe.





## PREFACE

The motivation behind this study was twofold: (1) a desire to utilize the AC Transit employees' strike as a semicontrolled experiment to assess the inter-relationships between BART patronage and the provision of complementary and parallel transit services, and (2) Metropolitan Transportation Commission guidelines recommending that the Transportation System and Travel Behavior Project study the impacts of labor stoppages by transit workers on travel and the service provided by the total transportation system. This document describes the findings and conclusions of this study to assess selected travel impacts of the AC Transit strike. The data collection methodology utilized in this study is described in another document.\*

The two surveys undertaken as part of this study were conducted by Market Facts, Inc., under the direction of Mr. Richard Ross and Mr. Frank Griffiths. Special thanks are due to the following individuals and organizations who provided data utilized in the study and advice concerning the design of the project.

- Mr. Wolfgang Homburger, Institute of Transportation and Traffic Engineering, University of California, Berkeley.
- Mr. Stephen Ito, Toll Bridge Administration, California Department of Transportation.
- Mr. Richard Videll and Mr. Warren Robinson, AC Transit.
- Mr. Ward Belding, Bay Area Rapid Transit District.
- State of California Public Utilities Commission.

As part of a work/study program of Stanford University's Graduate School of Business Administration, Mr. John Goldman performed the detailed design of the study and supervised the field surveys.

The study was conducted as an element of the Transportation System and Travel Behavior Project, BART Impact Program. The authors wish to thank Dr. Henry Bain and Mr. Joel Markowitz of the Metropolitan Transportation Commission's BART Impact Program staff and Ms. Miriam Hawley of BART for their constructive contributions and assistance in successfully accomplishing this effort.

While sincerely appreciating the contributions of each of the above individuals, the authors acknowledge their responsibility for the content and conclusions of this report.

---

\*"Data Collection Methodology and Primary Data Tabulations for an Assessment of the Impacts of the AC Transit Strike upon BART," prepared by Peat, Marwick, Mitchell & Co. for the BART Impact Program, Metropolitan Transportation Commission, Berkeley, California, February 1975.



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## I. INTRODUCTION

### Background

On July 1, 1974, the employees of the Alameda-Contra Costa Transit District (AC Transit) began a strike that was to last for 62 days. During this period, all AC Transit buses ceased operations, affecting the daily travel behavior of thousands of persons. Travelers who normally rode AC Transit were diverted to private automobiles or BART; those who utilized AC Transit as a feeder to BART had either to drive or walk to the BART stations. This study assesses the magnitude of the strike's travel impacts and investigates the travel relationships between BART and AC Transit; it was explicitly not designed as an assessment of the total impact of the AC Transit strike on the community.

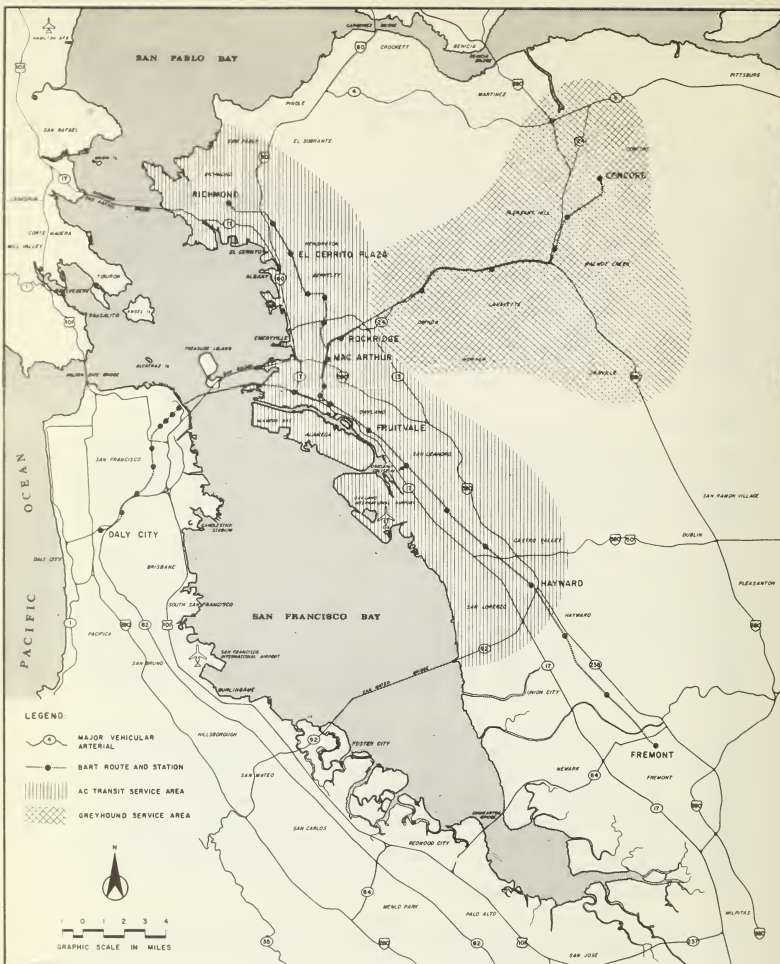
### Study Area

A map of the study area is presented in Figure 1. AC Transit serves an area of approximately 200 square miles with a population of about 950,000 extending from Richmond to Hayward and from the Berkeley Hills to San Francisco Bay. Immediately prior to the strike, approximately 200,000 person trips were made on AC Transit each day.

Greyhound serves an area of approximately 200 square miles in Central Contra Costa County east of the Berkeley Hills. The Greyhound service consists largely of express service between terminals in Orinda, Lafayette, Walnut Creek, Concord, and downtown San Francisco. Immediately prior to the strike, approximately 9,400 rides per day were made on the Greyhound service. The only other public transportation between the Concord/Walnut Creek/Orinda area and San Francisco involved transferring between BART and AC Transit transbay buses at the MacArthur Station in Oakland (before the strike, approximately 3,000 daily person trips were made in this manner).

Three BART lines--the Fremont, Concord, and Richmond lines--serve the East Bay (the area east of San Francisco Bay extending from Martinez in the north to Fremont in the south and from the Bay to Concord and Livermore in the east). Approximately 18 of the 25 East Bay BART stations are located in the AC Transit service area. Transbay BART service did not begin until September 16, 1974, 16 days after the settlement of the strike. During the strike, only two BART services--Richmond-Fremont and Concord-MacArthur--were in operation in the East Bay; transfers between these services were possible at the MacArthur Station. Most of the AC Transit service area is beyond reasonable walking distance of the BART stations.

The freeway system in the East Bay is heavily oriented to the San Francisco-Oakland Bay Bridge (Bay Bridge); four freeways radiate from the Bay Bridge--I-80, Route 24, I-580, and Route 17. These have a total of 16 lanes in each





direction just before they merge into the Bay Bridge's five lanes. Hence, the merger sections immediately prior to crossing the Bay Bridge became highly congested as a result of the cessation of AC Transit service. Because of this congestion, some automobile drivers utilized alternative routes involving the Richmond-San Rafael and San Mateo-Hayward Bridges.

### Study Objectives and Methodology

The objectives of this project were to:

- Examine the interrelationships between BART patronage and the provision of complementary and parallel transit bus services.
- Assess the impact of the strike on travelers who normally utilize AC Transit.
- Assess the impact of the AC Transit strike on transbay travel patterns including automobile traffic utilizing the principal bridges across the Bay and usage of the Greyhound bus service.

The study objectives were achieved through a methodology of analyzing aggregate vehicle and passenger counts made before, during, and after the strike and by conducting two poststrike personal interview surveys of AC Transit passengers. The count information consisted of:

- Vehicle counts made on the San Mateo-Hayward, San Francisco-Oakland Bay, and Richmond-San Rafael Bridges.
- Passenger counts made on westbound Greyhound buses at Orinda (the last point served by westbound Greyhound commuter buses to San Francisco).
- AC Transit's daily ridership extracted from revenue and patronage reporting forms (Form 34).
- Counts of transfers from BART to AC Transit.
- Counts of entering and exiting passengers at BART stations.

The poststrike surveys ascertained the travel behavior of and the effect of the AC Transit strike on two groups of travelers:

- Individuals transferring from BART onto AC Transit buses (the feeder bus survey).
- Individuals boarding AC Transit buses on routes that parallel BART lines (the parallel route survey).

In October 1974--eight weeks after the strike and six weeks after the initiation of transbay BART service--an on-board mail-back survey of transbay bus travelers was conducted as a component of a larger effort to assess the immediate effects of the initiation of transbay BART service. This survey included one question pertaining to the behavior of the bus travelers during the strike. An analysis of the responses to this question are included in this report.

## II. IMPACTS ON TRAVEL PATTERNS

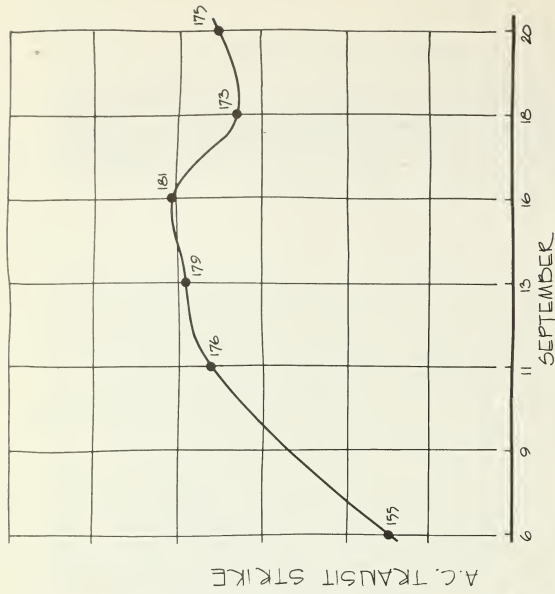
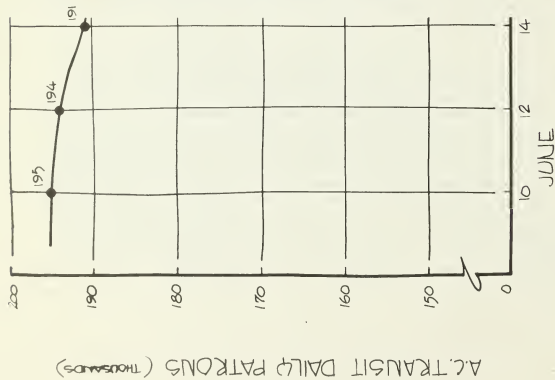
This chapter describes the changes in travel patterns which occurred during the AC Transit strike. The study methodology required the use of data from secondary sources, and while these data were available for transbay travel, they were not available for travel within the East Bay (with the exception of travel on BART). Consequently, this discussion focuses largely on the alternative travel choices of the transbay travelers.

### AC Transit Usage

A summary of daily AC Transit ridership in the periods immediately before, during, and after the strike of AC Transit employees is presented in Figure 2. In the period immediately prior to the strike, about 200,000 riders used AC Transit on an average day. After the strike, ridership on an average day increased from 155,000 to 181,000. Ridership then began to decline with the initiation of transbay BART service on September 16, 1974. Prior to the strike, approximately 65,000 of the 200,000 daily riders on AC Transit (or 33%) involved transbay trips. In the two weeks between the end of the strike and the initiation of transbay BART service, the proportion of daily AC ridership involving transbay trips remained the same as before the strike.

The distribution of originations of AC Transit ridership within the AC Transit service area is presented in Figure 3. About 40% of AC Transit ridership originates on routes which largely serve Oakland, and about 20% of the ridership originates on routes that largely serve Berkeley and Hayward, respectively. Travelers may board AC Transit buses on specific routes between the originating area and downtown Oakland or San Francisco. Since these estimates are based on reports of the total patronage for each AC route, this assignment of riders to the originating areas is a best estimate made in the absence of an on-board survey.

The extent of AC Transit use as a feeder service by BART patrons is illustrated in Table 1. Within the AC Transit service area before the strike, 25% of all patrons exiting from BART stations transferred onto AC Transit feeder bus lines. An estimated additional 1,500 daily passengers transferred from BART onto AC Transit transbay buses at the MacArthur BART Station, representing 55% of all those exiting at MacArthur and raising the percentage of total BART users within the AC Transit service area transferring onto AC Transit to 30%. In the two-week period between the settlement of the strike and the initiation of transbay BART service, the percentage of BART patrons transferring onto AC Transit buses (not including transbay buses) was only 21%. It can be presumed that, in time, the transfer ratio would have rebounded to the prestrike figure of 25%; however, the influence of transbay BART service interrupted normal resumption of AC Transit usage.



1974

Figure 2.

AVERAGE DAILY RIDERSHIP OF A.C. TRANSIT BEFORE AND AFTER THE STRIKE  
 PEAT, MARQUICK, MITCHELL & CO.,  
 FEBRUARY 2, 1975

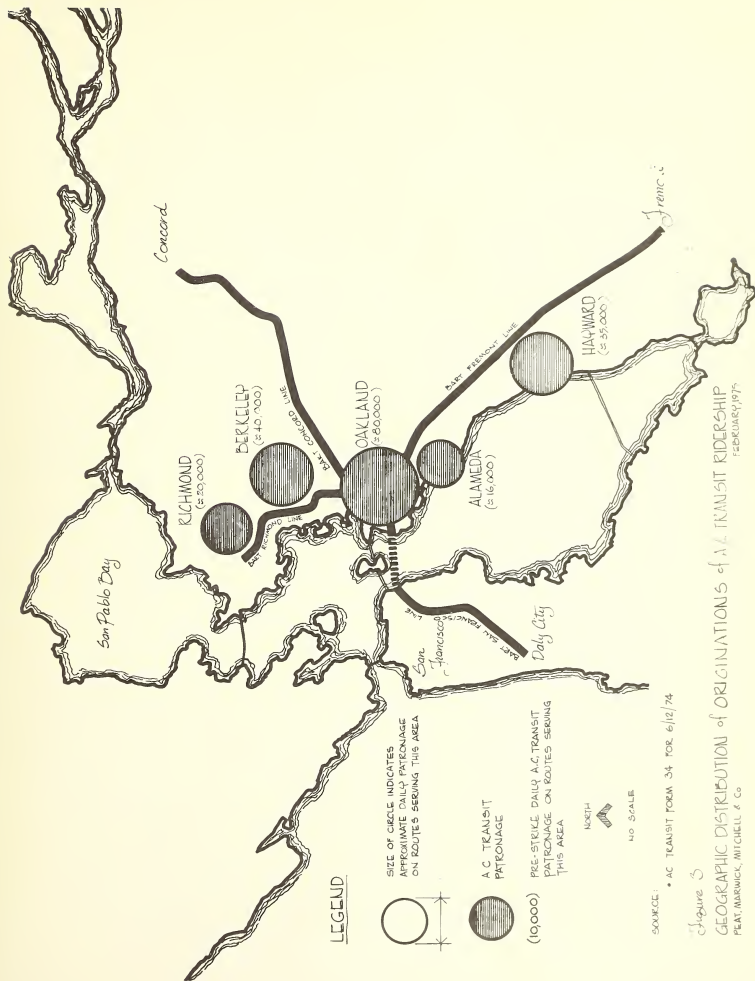


Figure 3  
GEOGRAPHIC DISTRIBUTION OF ORIGINATIONS OF A.C. TRANSIT RIDERSHIP  
FEBRUARY 1975  
PEAT MARWICK MITCHELL & CO

Table 1

BART PATRONS TRANSFERRING ONTO AC TRANSIT  
1974

BART Station	Prestrike <sup>a</sup>			Poststrike <sup>b</sup>		
	BART/AC Transfers	BART Exit Patrons	% Exits Transferring To AC Transit	BART/AC Transfers	BART Exit Patrons	% Exits Transferring To AC Transit
MacArthur <sup>c</sup>	581	2,763	21%	562	2,819	20%
19th Street	556	4,460	12	462	4,814	10
12th Street	1,017	3,515	29	862	3,502	25
Lake Merritt	71	1,451	5	78	1,747	4
Total - Oakland Stations	2,225	12,189	18	1,964	12,882	15
Fruitvale <sup>d</sup>	655	1,470	45	722	1,726	42
Coliseum	747	1,367	55	734	1,464	50
San Leandro	548	1,771	31	476	1,605	30
Bay Fair	256	1,560	16	224	1,456	15
Hayward	808	2,061	39	505	1,814	28
South Hayward	138	1,038	13	119	968	12
Total - Alameda Line (Excluding Union City and Fremont not served by AC Transit)	3,152	9,267	34	2,780	9,033	31
Ashby	166	627	26	193	909	21
Berkeley	827	3,663	23	800	3,875	21
North Berkeley	168	776	22	194	1,020	19
El Cerrito Plaza <sup>d</sup>	259	1,406	18	186	1,260	15
El Cerrito Del Norte	219	1,422	15	229	1,457	16
Richmond	325	968	34	273	942	29
Total - Richmond Line	1,964	8,862	22	1,875	9,463	20
Rockridge <sup>d</sup>	317	694	46	278	799	35
(Only Concord Line Station served by AC Transit)						
Total	7,658	31,012	25	6,897	32,177	21
Total including Transbay Transfers	9,183	31,012	30	8,422	32,177	26
Total of Four Survey Stations	2,039	5,631	36	1,691	5,599	30

a. Prestrike data from Tuesday, June 25, 1974.

b. Poststrike data from Wednesday, September 11, 1974 (day of the feeder bus survey).

c. Not including those transferring onto AC Transit's transbay buses (see Table 2).

d. One of four survey stations.

Sources: BART patronage counts and AC Transit transfer counts.

## BART Usage

The impact of the AC Transit strike on East Bay BART patronage is illustrated in Figure 4. After the beginning of the strike in early July, patronage steadily rose as travelers developed an improved knowledge of BART service. BART patronage stabilized during the first three weeks of August and declined in the fourth week probably as a result of the Labor Day weekend. With the settlement of the strike, BART patronage rapidly declined to prestrike levels.

The change in BART revenues during the strike suggests that some of those deprived of feeder bus service ceased using BART, while those who normally used AC Transit exclusively (and probably for shorter trips) utilized BART more heavily. Before the strike, the average fare was \$0.5600 per passenger. As shown in Table 2, this dropped 10.6% to \$0.5006 during the strike, reflecting shorter average trip lengths. Thus, in spite of the fact that total weekly East Bay BART patronage increased by about 7% during the strike (as opposed to the period immediately prior to the strike), total weekly East Bay BART revenue decreased by about 4%.

Patronage patterns for the four stations where the feeder bus survey was conducted are presented in Figure 5 for the same time frame as Figure 4. The Hayward Station, which is on the fringe of the AC Transit service area, showed an overall decrease, while the other three stations experienced increased patronage during the strike.

These net changes in BART patronage are the result of two opposing impacts of the AC Transit strike on BART usage:

- The cessation of feeder bus service to BART stations diverting travelers away from BART by suppressing trips or encouraging automobile usage for the entire trip.
- The cessation of AC Transit service resulting in travelers choosing BART as an alternative form of transportation.

Trips that were normally made on AC Transit but diverted to BART during the strike had, by definition, both origin and destination within the AC Transit service area. Therefore, the study hypothesizes that BART stations within the service area could expect a loss of patronage due to the unavailability of feeder bus service, while also experiencing an increase in patrons using BART as an alternative mode. In contrast, stations outside the AC Transit service area would only experience a loss of patrons due to a lack of feeder bus connections for those trips originating or terminating within the AC Transit service area.

The BART patronage figures presented in Table 2 support these suppositions. In highly urbanized sections of the AC Transit service area, where reliance on public transportation is greatest, the influx of patrons utilizing BART as an alternative mode more than compensated for the loss of patrons caused

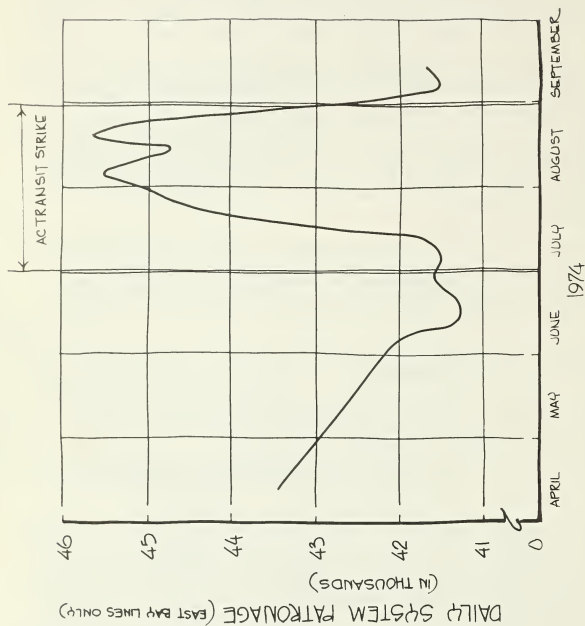


Figure 4.  
EFFECT OF A.C. TRANSIT STRIKE ON DART PATRONAGE  
PEAT, MARLICK, MITCHELL & CO.  
FEBRUARY, 1975



Table 2

EFFECT OF AC TRANSIT STRIKE ON BART STATION PATRONAGE  
1974

East Bay BART Stations	Prestrike Week of June 17-21 In + Out	Midstrike Week of July 15-19 In + Out	Change	
			Total	Percent
<u>Stations Within AC Transit Service Area</u>				
Richmond	9,666	10,565	899	9.3%
E.C. Del Norte	14,485	15,498	1,013	7.0
E.C. Plaza	13,127	16,484	3,357	25.6
North Berkeley	8,081	13,125	5,044	62.4
Berkeley	35,341	46,548	11,207	31.7
Ashby	6,897	14,153	7,256	105.2
MacArthur*	27,411	18,269	-9,142	-33.4
19th Street	45,928	57,353	11,425	24.9
12th Street	34,270	37,477	3,207	9.4
Lake Merritt	12,150	20,468	8,318	68.5
Fruitvale	14,146	21,372	7,226	51.1
Coliseum	13,475	16,546	3,071	22.8
San Leandro	17,311	16,052	-1,259	-7.3
Bay Fair	15,786	15,207	-579	-3.7
Hayward	18,724	16,739	-1,985	-10.6
South Hayward	11,469	9,012	-2,457	-21.4
Rockridge	6,018	8,348	2,330	38.7
Subtotals**	152,143	176,608	24,465	16.4%
<u>Stations Outside AC Transit Service Area</u>				
Union City	10,452	8,832	-1,620	-15.5%
Fremont	20,535	17,659	-2,876	-14.0
Orinda	9,563	7,187	-2,376	-24.8
Lafayette	11,901	8,721	-3,180	-26.7
Walnut Creek	17,531	13,964	-3,567	-20.3
Pleasant Hill	14,709	10,268	-4,441	-30.2
Concord	17,360	12,989	-4,371	-25.2
Subtotals**	51,025	39,810	-11,215	-22.0%
East Bay Totals**	<u>203,168</u>	<u>216,418</u>	<u>13,250</u>	6.8%
<u>Revenue in East Bay</u>				
Total Weekly				
Revenue	\$112,941	\$107,939	-\$5,002	-4.4%
Average Fare per Passenger	\$0.5600	\$0.5006	-\$0.0594	-10.6%
*MacArthur, if BART/AC Commuters are subtracted				
	12,000 approx.	18,269 approx.	6,000 approx.	50.0% approx.
**These numbers are passengers, i.e., $\frac{\text{In} + \text{Out}}{2}$				

Source: BART Analytical Services.

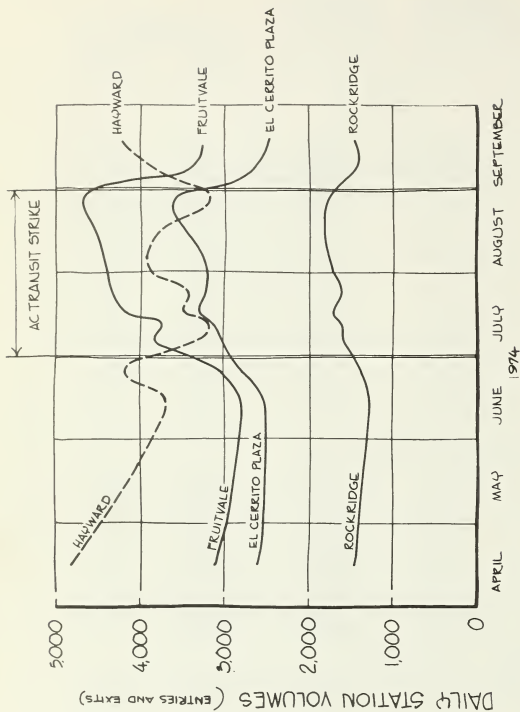


Figure 5.  
EFFECT OF A.C. TRANSIT STRIKE ON SELECTED BART STATION VOLUMES  
PEAT, MARQUICK, MITCHELL & CO.,  
FEBRUARY, 1975

by the lack of feeder buses. In less urbanized sections (Richmond, El Cerrito, San Leandro, and Hayward) of the AC service area, the patronage increases and decreases largely balanced each other with net changes varying from plus 9.3% to minus 10.6%. At South Hayward, the fringe of the AC service area, reliance on BART as an alternative to AC Transit was less pronounced, and thus a net patronage loss of 21.4% ensued.

Outside the AC service area, all stations showed a patronage loss during the strike. At the Union City and Fremont Stations, the losses were moderate, averaging approximately 15%. For the Concord line stations, the losses were heavier. This was partly due to the Concord line's heavy use by transbay commuters who normally transferred to AC Transit buses at the MacArthur Station for the transbay trip. During the strike, these commuters were forced to use automobiles or Greyhound buses, resulting in a 25% patronage decrease on the Concord line (excluding Rockridge which is within the AC Transit service area).

#### Automobile Usage

The basic impacts of the strike on East Bay automobile usage were greater dependence on the automobile and more traffic congestion--especially during commute hours. Although increased usage occurred throughout the East Bay, the most convenient points for measuring automobile traffic were the transbay bridges serving the affected area. Since the Bay Bridge is the only bridge used by AC Transit, it would have been the only bridge affected during the strike if automobile travel patterns had remained the same. However, the Richmond-San Rafael\* and the San Mateo-Hayward Bridges were also affected as drivers diverted from the Bay Bridge because of traffic congestion.

The increased usage of the three bridges is displayed in Table 3 and Figure 6. The increases started immediately after the strike began, and in general, bridge volumes returned to prestrike levels soon after the settlement of the strike. Proportionately, traffic volume increases during the peak hours were significantly greater than daily traffic increases, reflecting the major service which transbay AC Transit service provides to peak hour work trips. While the proportional daily traffic increase on the San Mateo-Hayward Bridge was greater than that of the Bay Bridge (15% vs. 6%), the absolute increase in the number of vehicles was much greater on the Bay Bridge.

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\*The Richmond-San Rafael Bridge is a link in an East Bay-San Francisco travel corridor via Marin County. Although this corridor also includes the Golden Gate Bridge, data for the latter are neither readily available nor wholly reflective of transbay strike impacts.

Table 3

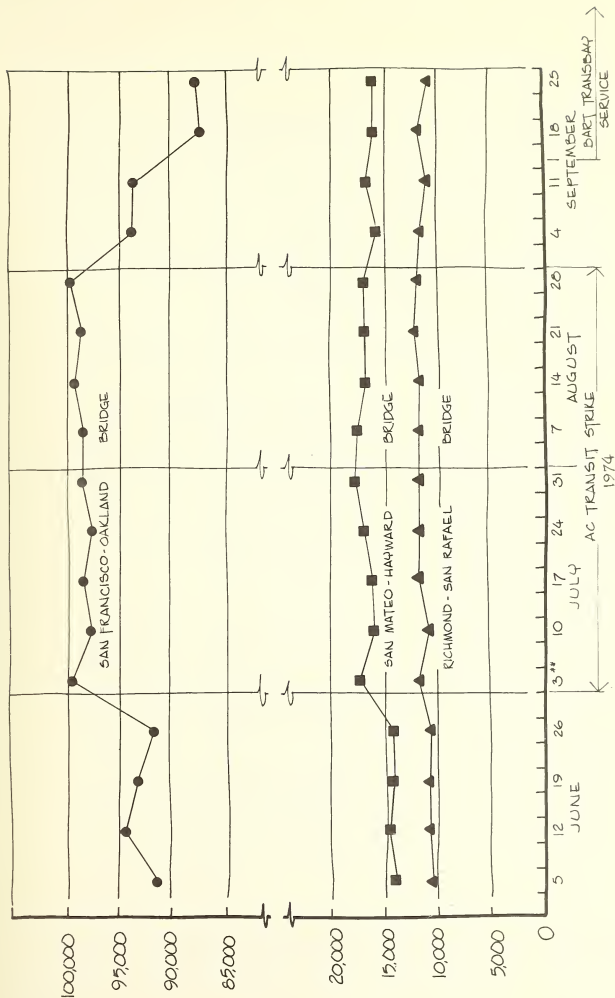
EFFECT OF THE AC TRANSIT STRIKE ON  
WESTBOUND VEHICLE TRIPS ON THE BAY BRIDGES

Bridge	Prestrike	Midstrike	Change	
			Total	Percent
<u>San Francisco-Oakland</u>				
Daily (24 hour)	92,600 <sup>a</sup>	98,500 <sup>b</sup>	5,900	6.4%
Working Hours (5 a.m.-8 p.m.)	79,600 <sup>c</sup>	86,000 <sup>d</sup>	6,400	8.0
Morning Peak (6 a.m.-9 a.m.)	22,000 <sup>c</sup>	24,700 <sup>d</sup>	2,700	12.3
<u>San Mateo-Hayward</u>				
Daily (24 hour)	14,800 <sup>a</sup>	17,100 <sup>b</sup>	2,300	15.5
Working Hours (5 a.m.-8 p.m.)	13,200 <sup>e</sup>	15,200 <sup>d</sup>	2,000	15.2
Morning Peak (6 a.m.-9 a.m.)	3,700 <sup>e</sup>	5,100 <sup>d</sup>	1,400	37.8
<u>Richmond-San Rafael</u>				
Daily (24 hour)	10,800 <sup>a</sup>	11,500 <sup>b</sup>	700	6.5
Total Daily	<u>118,200<sup>a</sup></u>	<u>127,100<sup>b</sup></u>	<u>8,900</u>	7.5%

Note: The values in this table may not correspond to those in Table 4 due to different reporting periods.

- a. Average of all Tuesdays, Wednesdays, and Thursdays in June 1974.
- b. Average of all Tuesdays, Wednesdays, and Thursdays in July and August 1974, except for Thursday, July 4.
- c. Wednesday, June 26, 1974 (factored to be equivalent to monthly average).
- d. Wednesday, July 31, 1974 (factored to be equivalent to two-month average).
- e. Wednesday, April 10, 1974 (factored to be equivalent to monthly average).

AVERAGE DAILY WESTBOUND TRAFFIC VOLUME \*



\* DAILY VOLUME CALCULATED AS THE AVERAGE OF THREE DAYS IN EACH WEEK : TUESDAY, WEDNESDAY AND THURSDAY

\*\* DAILY VOLUME CALCULATED AS THE AVERAGE OF ONLY TWO DAYS, TUESDAY AND WEDNESDAY DUE TO JULY 4<sup>th</sup> HOLIDAY (THURSDAY)

Figure 6.  
IMPACT of AC TRANSIT STRIKE ON THREE TRANSBAY BRIDGES  
FEAT. MARWICK, MITCHELL & Co.  
FEBRUARY, 1975

The changes in diurnal traffic flow before, during, and after the strike are illustrated on Table 4 and Figure 7 for the Bay Bridge and on Figure 8 for the San Mateo-Hayward Bridge. The peak hour traffic volume on the Bay Bridge did not increase during the strike (it actually decreased, possibly due to the massive traffic congestion), but the duration of the a.m. peak broadened significantly. This indicates that the Bay Bridge normally operates at or near its maximum capacity during its peak hour. To serve an increased number of transbay automobile trips, it was necessary to: (1) broaden the peak period on the Bay Bridge, and/or (2) divert Bay Bridge users to the San Mateo-Hayward or Richmond-San Rafael Bridges. During the morning peak on the San Mateo-Hayward Bridge (illustrated in Figure 8), the traffic volume increased and the duration of the peak broadened.

Other analyses of westbound traffic on the Bay Bridge by the California Department of Transportation\* developed the following conclusions (see Table 4):

- Person Trips - Total westbound person trips across the Bay Bridge between 6 a.m. and 11 a.m. were about 2,200 less than before the strike. However, analysis shows that there were about 600 more vehicle trips before 6 a.m. on the Bay Bridge, as well as 1,300 more vehicle trips between 6 a.m. and 11 a.m. on the San Mateo-Hayward Bridge. While no occupancy rates were available for these additional vehicles, it is clear that there were very close to the same number of people making transbay trips during the strike as before. Additional trips across the Richmond-San Rafael Bridge were found to be negligible.
- Delay - Before the strike, the daily delay through the Bay Bridge toll plaza was about 1,800 person hours between 6 a.m. and 9 a.m. During the strike, an estimated daily additional increment of 9,000 person hours of delay was incurred by morning commuters during the same 6 a.m. to 9 a.m. period. This amounted to 15 minutes of additional delay for nonusers of the priority lanes and 10 minutes of additional delay for car pool and bus patrons before they can reach the start of the priority car pool and bus lanes.
- Car Pools - The number of car pools (three or more persons per car) using the priority car pool lanes on the Bay Bridge increased from 1,850 to about 4,400 between 6 a.m. and 9 a.m.

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\*Information Memorandum, Highway Operations Branch, District 04, California Department of Transportation, San Francisco, California, August 22, 1974.

Table 4

## WESTBOUND TRAFFIC AT THE SAN FRANCISCO-OAKLAND BAY BRIDGE TOLL PLAZA

Time	VEHICLES									
	Total Average				PERSONS					
	Westbound Daily Traffic (autos + buses + trucks)				In Autos		In Buses		Total	
	Before Strike	During Strike	Before Strike	During Strike	Before Strike	During Strike	Before Strike	During Strike	Before Strike	During Strike
5 a.m.- 6 a.m.	1,300	1,900			29,700	39,400	22,800	6,000	52,500	45,400
6 a.m.- 9 a.m.	22,000	24,100	609	147	7,300	10,500	1,100	200	8,400	10,700
9 a.m.-10 a.m.	5,800	7,000	91	7	5,900	9,200	800	100	6,700	9,300
10 a.m.-11 a.m.	4,300	5,900	86	4	42,900	59,100	24,700	6,300	67,600	65,400
6 a.m.-11 a.m.	32,100	37,000	786	158						
5 a.m.-11 a.m.	33,400	38,900								
24 Hour Total	89,500	95,800								

AUTO  
OCCUPANCY  
Before Strike    During Strike

1.44    1.75  
1.36    1.48  
1.48    1.68

Note: Traffic data in this chart compares the third week in June 1974 with the third week in July 1974; therefore, there are small discrepancies between this table and Table 3.

Source: Information Memorandum, Highway Operations Branch, District 04, California Department of Transportation, San Francisco, California, August 22, 1974.

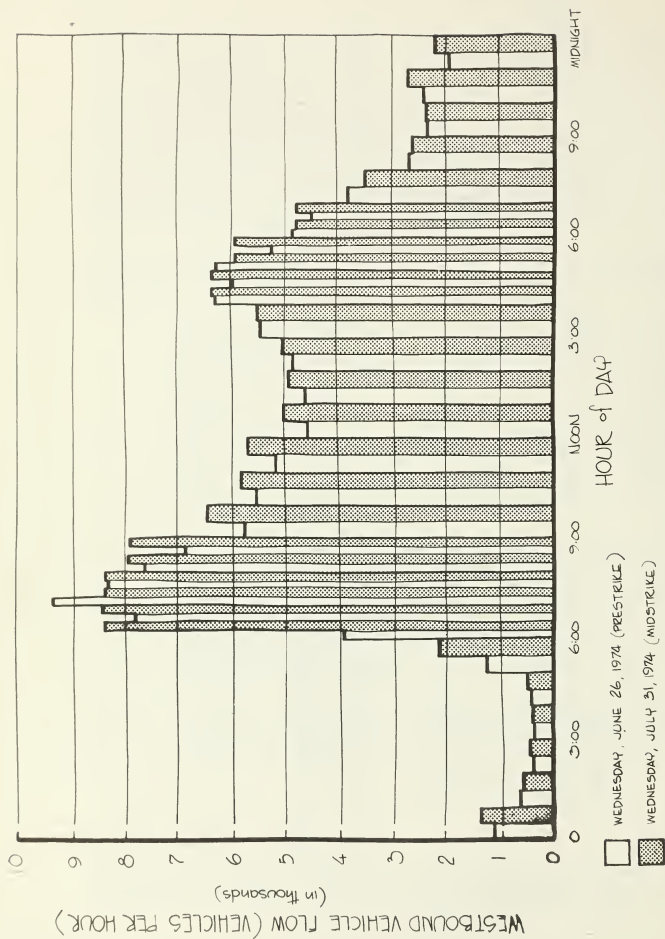


Figure 7.

EFFECT OF AC TRANSIT STRIKE ON THE SAN FRANCISCO-OAKLAND BAY BRIDGE DIURNAL VEHICLE FLOW

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- Automobile Occupancy - Travelers shared rides to a greater extent than indicated by the increase of car pools with three or more persons using the priority lane. During the strike, the average automobile occupancy on the Bay Bridge increased by about 22% from 1.44 to 1.75 for the 6 a.m. to 9 a.m. period.

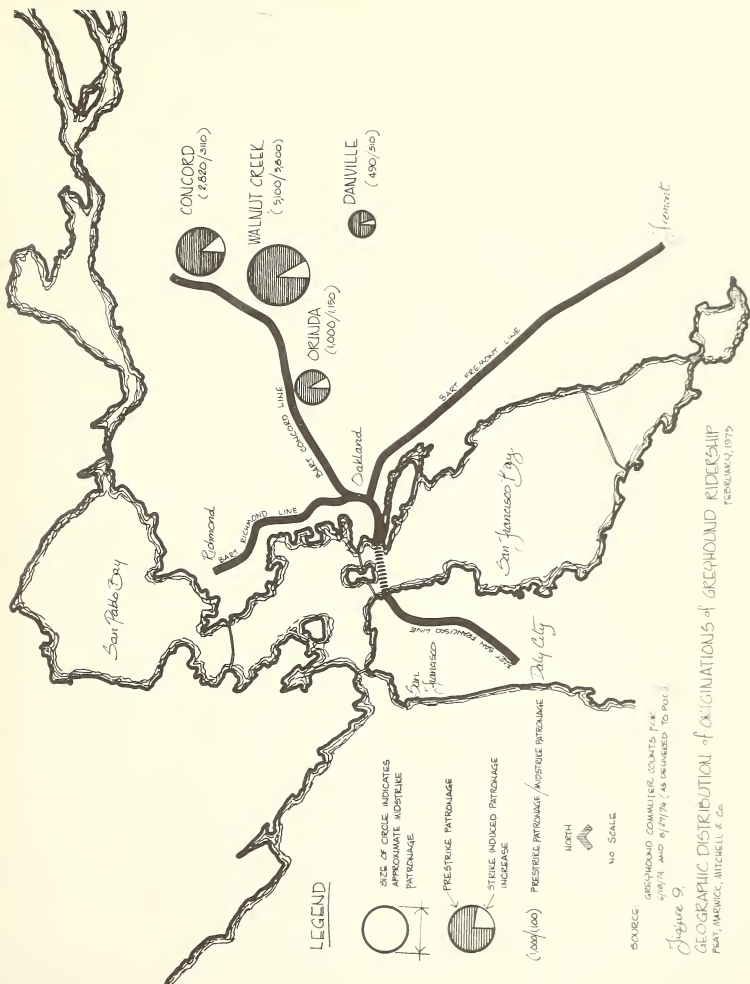
#### Greyhound Bus Usage

During the AC Transit strike, Greyhound commuter buses in the Concord/Walnut Creek/Orinda corridor experienced a 13% increase in usage. Patronage increased from 9,400 daily trips (westbound and eastbound) before the strike to 10,600 daily trips during the strike. The geographic distribution of the originations of Greyhound ridership before and during the strike is presented in Figure 9.

The increase in Greyhound ridership could have two sources:

- Commuters who previously took BART to the MacArthur Station and transferred onto AC Transit for the transbay journey.
- Commuters who normally drove to San Francisco but diverted to the bus because of the massive traffic congestion caused by the strike.

It would appear that many of the additional 1,200 daily Greyhound passengers were displaced BART users, inasmuch as patronage on BART's Concord line (including the Orinda, Lafayette, Walnut Creek, Pleasant Hill, and Concord Stations) decreased by approximately 1,800 daily passengers.





### III. IMPACTS ON TRAVEL BEHAVIOR

After the strike ended, two personal interview surveys of AC Transit riders were conducted to assess their travel behavior during the strike and to determine the strike's impact on them. In particular, strike-initiated shifts in travel patterns with respect to BART were investigated--including the loss of patronage due to the cessation of feeder bus service and the increase in patronage resulting from the use of BART as an alternative to AC Transit.

The first survey (feeder bus) involved personal interviews of travelers who transferred from BART to AC Transit at four selected BART stations. The second survey (parallel route) involved personal interviews of travelers boarding AC Transit buses at six points in downtown Oakland. The travel behavior impacts of the AC Transit strike are described in this chapter based on the results of these two surveys.

#### Survey of Riders Using AC Transit as an Access Mode for BART

Methodology. The survey of feeder bus users was designed to answer two major questions:

- Who uses AC Transit as a feeder for BART?
- How did the AC Transit strike affect these users?

The feeder bus survey, conducted on Wednesday, September 11, 1974, from 6:30 a.m. until 6:30 p.m., involved personal interviews of travelers at four BART stations--Rockridge, El Cerrito Plaza, Fruitvale, and Hayward. These were selected as representative stations within the AC Transit service area on each of the three East Bay BART lines. The locations of these stations is indicated in Figure 1 and the number of BART patrons transferring to AC Transit at each of these stations is presented in Table 1. To ensure that a sufficient number of interviews would be completed, stations with a relatively large number of BART/AC Transit transfers were selected. Prior to the strike, about 36% of the BART patrons at the selected four stations transferred to AC Transit, whereas the average for all East Bay BART stations in the AC Transit service area was only 25%.

In the survey of feeder bus users, 430 interviews were initiated. While 370 (86%) were completed, 60 were terminated because the interviewed individuals had to board a bus, and four individuals refused to be surveyed. At only one station--Rockridge--were fewer interviews completed than anticipated. While 50 interviews were targeted at that station, only 42 were actually completed. The number of interviews completed at the other three stations were above expectations--22 at El Cerrito Plaza, 109 at Fruitvale, and 197 at Hayward.

Responses to the survey of feeder bus riders were weighted to reflect all persons transferring from BART onto AC Transit buses at the stations involved for the day of the survey. The weighting expanded the original sample (only 355 of the 370 completed interviews contained usable responses) to a universe of 1,604 transfers at the four stations. A copy of the questionnaire with the weighted number of responses for each question is contained in Appendix A.

Of the 1,604 persons transferring onto AC Transit from BART on the day of the survey, 1,413 normally made one or more weekly trips for the same trip purpose. All of the comparisons of behavior during and after the strike which are presented in this section are for this group of 1,413 travelers who made one or more weekly trips for the same trip purpose. Focusing the analysis on this group of "regular" travelers is justified since respondents were asked to "recall" their travel behavior during the strike and respondents with a regular trip (defined as a trip with the same origin, destination, and purpose undertaken more than once per week) are more likely to accurately remember their situations during the strike. Also, it should be noted that only about 12% of the travelers were not considered as a result of this focus upon the regular travelers.

Demographic Profile of Feeder Bus Riders. A summary of the demographic characteristics of feeder bus users at the selected stations is contained in Table 5. Of the persons transferring onto AC Transit from BART at the four BART stations surveyed, 56% are female and 76% are white. Other races include 17% blacks, 4% Spanish Americans, and 3% Orientals. Lower, middle, and upper income groups comprise 32%, 40%, and 28% of the population, respectively. The age breakdown is young (under 25) 37%, working age (25 to 64) 59%, and elderly (over 64) 4%. The largest single group, comprising 12% of the population, is white, female, working age, and middle income.

Impact of Strike on Trip Frequency. The effect of the strike on trip frequency is illustrated in Figure 10. Overall, 39% of all BART patrons utilizing AC Transit feeder buses made fewer trips during the strike, 60% made the same number, and the remaining 1% made more trips. About 90% of those who made fewer trips (or 35% of the total BART patrons using the AC Transit feeder buses) suppressed all of their trips during the strike.

Those interviewed normally made 4.1 trips per week, while during the strike, they made only 2.9 trips per week. Of those who normally made five or more trips per week, 73% continued making the same number of trips during the strike, while 27% made fewer trips. Included in the 27% are 24% who suppressed all trips during the strike. Of those who normally made less than five trips per week, 35% made the same number, 62% made fewer trips, and 3% made more trips during the strike. The 62% who made fewer trips includes 57% who suppressed all trips during the strike.

Table 5

DEMOGRAPHIC PROFILE OF FEEDER BUS RIDERS AT FOUR BART STATIONS<sup>a</sup>  
(Each Cell Contains the Weighted Number of Passengers in that Category)

Gender	Age <sup>c</sup>	Household Income <sup>b</sup> -White					Household Income <sup>b</sup> -All Other Races				
		Lower	Middle	Upper	Not Reported	Total	Lower	Middle	Upper	Not Reported	Total
MALE	Young	29	91	45	17	182	33	31	3	2	69
	Working Age	63	115	148	14	340	16	55	25	0	96
	Elderly	12	3	2	0	17	3	0	0	0	3
	Subtotal	104	209	195	31	539	52	86	28	2	168
FEMALE	Young	103	54	55	21	233	40	34	7	28	109
	Working Age	108	177	97	23	405	48	33	21	2	104
	Elderly	24	0	19	3	46	0	0	0	0	0
	Subtotal	235	231	171	47	684	88	67	28	30	213
TOTAL		339	440	366	78	1,223	140	153	56	32	381

a. Values in this table represent total daily trips at the four BART stations involved in the survey by persons normally using AC Transit as an egress mode from BART.

b. Household Income Categories: Lower - below \$7,000 annually.  
Middle - \$7,000 to \$15,000 annually.  
Upper - above \$15,000 annually.

c. Age Categories: Young - under 25 years.  
Working Age - 25 years to 64 years.  
Elderly - over 64 years.

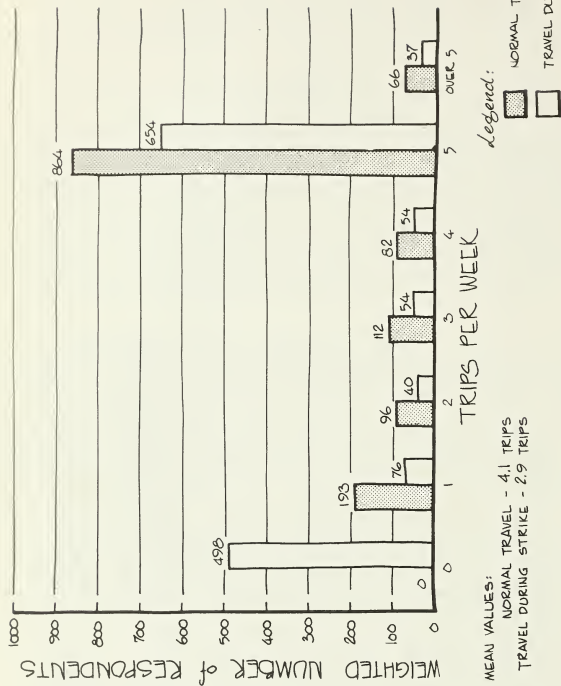


Figure 1a.

SURVEY OF FEEDER BUS RIDERS WEEKLY TRIP FREQUENCY DURING AND AFTER  
 A.C. TRANSIT STRIKE

PEAT, MARWICK, MITCHELL & Co.

FEBRUARY, 1975



The levels of trip suppression for selected groups of riders are summarized in Table 6. The suppression of nonwork trips (59%) during the strike was about three times greater than the suppression of work trips (21%).

The young and the elderly--who undertake a relatively high proportion of non-work trips and have relatively low automobile availability--experienced trip suppression rates significantly greater than the average. While overall, 35% of all trips were suppressed, 50% of the trips of the young and 60% of the trips of the elderly were not undertaken during the strike. Thus, the non-work travel of the young and the elderly was the largest single travel market segment of feeder bus riders suppressed during the strike.

Impact of Strike on Travel Mode Choice. During the AC Transit strike, those who would normally use AC Transit as a feeder for BART had three principal options:

- An alternative access mode for BART
- An alternative mode of travel other than BART for the entire trip
- Suppression of the trips normally made by BART/AC Transit

Of the 1,413 regular travelers considered in the analysis, 51% continued to use BART but used alternative modes for access, 14% diverted from BART to other modes for the entire trip, and 35% suppressed all trips during the strike.

The access mode for the group which continued to use BART during the strike was as follows: 37% were automobile drivers or passengers, 51% walked, and the remaining 12% utilized other means to access BART stations. The large percentage of users walking suggests that many of those who continued to utilize BART lived or worked near the stations.

As shown on Table 7, only 21% of the trips which continued to be made during the strike ceased using BART due to a lack of feeder bus service. About 84% of all persons not taking BART were either drivers or passengers of private automobiles. The groups most diverted to alternate modes were those with a high automobile availability and upper income (which is highly correlated with automobile availability).

Impact of the Strike on Travel Times. The strike had a serious deleterious effect on travel times as illustrated in Figure 11. For those feeder bus travelers who continued to make trips during the strike, trip times increased an average of eight minutes or 19% from 41.5 minutes per trip to 49.5 minutes per trip. About 46% of those who did not suppress all trips experienced increased trip times, 34% had their times unchanged,

Table 6

ANALYSIS OF SUPPRESSED TRIPS<sup>a</sup>  
Survey of Riders on AC Transit Feeder Routes for BART  
Weighted Results

	1	2	3
	Total Number of Pre- strike Trips	Total Trips Suppressed During Strike	Proportion of Trips Suppressed During Strike (Col 2 ÷ Col 1)
<u>Gender</u>			
Male	623	228	37%
Female	<u>790</u>	<u>270</u>	34
	1,413	498	35
<u>Age<sup>b</sup></u>			
Young	505	254	50
Working Age	853	211	25
Elderly	<u>55</u>	<u>33</u>	60
	1,413	498	35
<u>Ethnic Identification</u>			
White	1,109	403	36
All Other	<u>304</u>	<u>95</u>	31
	1,413	498	35
<u>Household Income<sup>c</sup></u>			
Lower Income	418	162	39
Middle Income	544	182	33
Upper Income	368	116	32
Income Not Reported	<u>83</u>	<u>38</u>	46
	1,413	498	35
<u>Automobile Availability<sup>d</sup></u>			
High Availability	413	127	31
Low Availability	411	144	35
No Automobile Available	<u>589</u>	<u>227</u>	38
	1,413	498	35
<u>Trip Type</u>			
Work	883	184	21
Nonwork	<u>530</u>	<u>314</u>	59
	1,413	498	35

a. Values in this table represent total daily trips at the four BART stations involved in the survey by persons normally using AC Transit as an egress mode from BART.

b. Age Categories: Young - Under 25  
Working Age - 25-64  
Elderly - Over 64

c. Household Income Categories: Lower - Below \$7,000 annually  
Middle - \$7,000 to \$15,000 annually  
Upper - Above \$15,000 annually

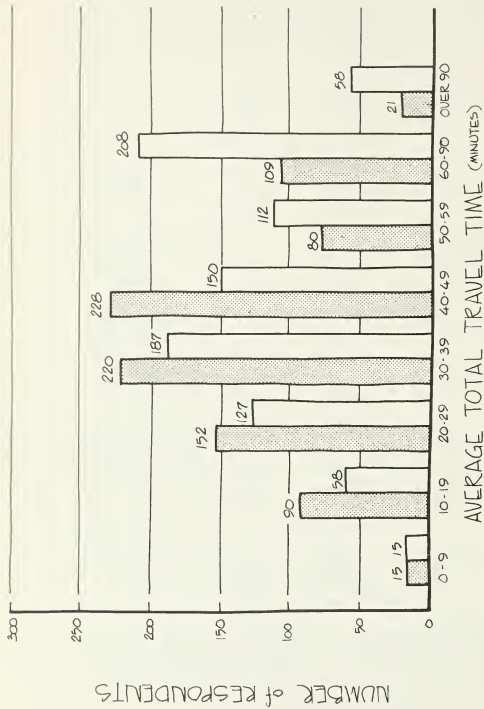
d. Automobile availability was determined by questions 22, 23A, and 23B of the questionnaire (Appendix A). The high availability group consists of those who said use of an automobile was "not very" or "not at all inconvenient." The low availability group consists of those who said use of an automobile was "somewhat" or "very inconvenient." The group that had "no automobile available" includes those without automobiles and those with no driver's license.

Table 7

UTILIZATION OF BART DURING THE AC TRANSIT STRIKE<sup>a</sup>  
 Survey of Riders on AC Transit Feeder Routes for BART  
 (For Respondents Who Continued to Make Trips During The Strike)

	1	2	3
	Total Trips Not Suppressed During The Strike	Total Trips Not On BART During The Strike	Proportion of Trips Not On BART During The Strike (Col 2 ÷ Col 1)
<u>Gender</u>			
Male	395	72	18%
Female	<u>520</u>	<u>122</u>	23
	915	194	21
<u>Age</u> <sup>b</sup>			
Young	251	41	16
Working Age	642	144	22
Elderly	<u>22</u>	<u>9</u>	41
	915	194	21
<u>Ethnic Identification</u>			
White	706	171	24
All Other	<u>209</u>	<u>23</u>	11
	915	194	21
<u>Household Income</u> <sup>c</sup>			
Lower Income	256	45	17
Middle Income	362	48	13
Upper Income	252	90	36
Income Not Reported	<u>45</u>	<u>11</u>	24
	915	194	21
<u>Automobile Availability</u> <sup>d</sup>			
High Availability	286	107	37
Low Availability	267	28	10
No Automobile Available	<u>362</u>	<u>59</u>	16
	915	194	21
<u>Trip Type</u>			
Work	698	155	22
Nonwork	<u>217</u>	<u>39</u>	18
	915	194	21

- a. Values in this table represent total daily trips at the four BART stations involved in the survey by persons normally using AC Transit as an egress mode from BART.
- b. Age Categories: Young - Under 25  
 Working Age - 25-64  
 Elderly - Over 64
- c. Household Income Categories: Lower - Below \$7,000 annually  
 Middle - \$7,000-\$15,000 annually  
 Upper - Above \$15,000 annually
- d. Automobile availability was determined by questions 22, 23A, and 23b of the questionnaire (Appendix A). The high availability group consists of those who said use of an automobile was "not very" or "not at all inconvenient." The low availability group consists of those who said use of an automobile was "somewhat" or "very inconvenient." The group that had "no automobile available" includes those without automobiles and those with no driver's license.



MEAN TRAVEL TIMES:

NORMAL TRAVEL - 41.5 MINUTES

TRAVEL DURING STRIKE - 49.5 MINUTES

Legend:

■ NORMAL TRAVEL

□ TRAVEL DURING STRIKE

Figure 11

SURVEY OF FEEDER BUS RIDERS' AVERAGE TRAVEL TIME DURING AND AFTER

A.C. TRANSIT STRIKE

FEAT, MARWICK, MITCHELL & Co.

FEBRUARY, 1975

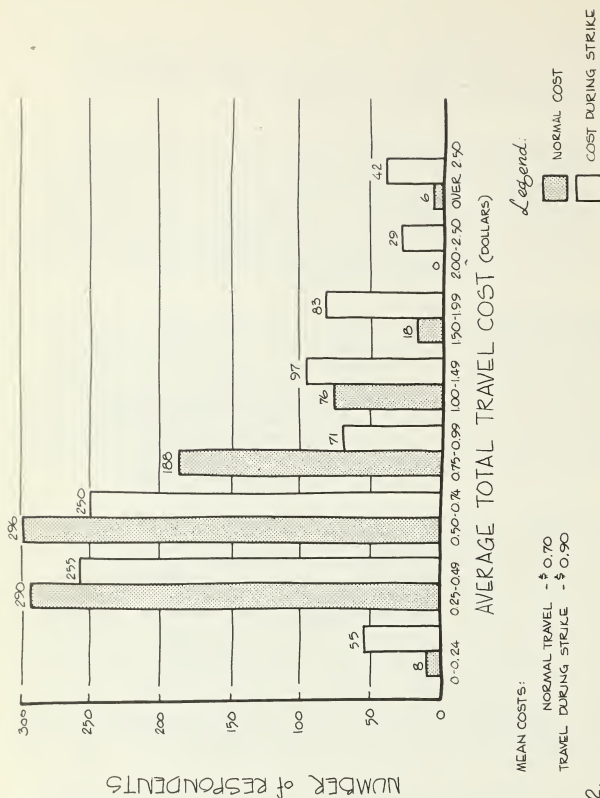
while 20% realized a time savings. Those trips with longer travel times were an average of 27 minutes longer, whereas those trips with shorter travel times decreased an average of 23 minutes (probably due to a shift from public transportation to private automobile).

Impact of the Strike on Travel Costs. The impacts of the AC Transit strike upon travel costs are presented in Figure 12. The strike caused the one-way trip cost for the average traveler who normally used AC Transit as a feeder for BART to increase from \$0.70 to \$0.90 (or 29%). About 28% of the travelers experienced cost increases, while 26% experienced cost decreases. The average increase for those who experienced an increase was \$0.84 (or 120%) while the average decrease for those whose costs decreased was \$0.32 (or 46%).

Impact of the Strike on Travel Schedules. For many travelers, increases in travel times required a shift in the scheduling of the trip. Strike induced scheduling shifts in "from home" and "to home" trips are displayed in Figures 13 and 14, respectively. "From home" trips experienced the largest shifts since many workers (and other commuters) must arrive at their destination at a specific time. About 27% left their home earlier during the strike, 58% at the same time, and 15% later. Those who left earlier departed an average of 65 minutes earlier, while those who left later deferred their departure for 45 minutes. For the return trip, 8% left for home an average of 80 minutes earlier and 9% left for home an average of 85 minutes later.

Problems Perceived by Travelers During the Strike. To determine respondents' attitudes on how they were affected by the strike, all respondents in the feeder bus survey were asked if they had any problems or difficulties in making their usual trip during the strike. Of the 1,413 weighted responses to this question, 865 (or 61%) answered yes and gave an average of 1.09 problems or difficulties caused by the strike. The problem shared by most people (51%) was the difficulty of using another transportation service. During the strike, the major alternative transportation services were BART, private automobile, and taxi. The only available access modes for BART were private automobile, walking, taxi, and bicycle. Therefore, it is understandable that the group reacting most strongly to this problem was the group with no automobile available (60% of the respondents in this group mentioned this problem), while the group least bothered was the one with a high automobile availability (only 35% of the respondents in this group mentioned this problem).

The only other strike induced problem which elicited a significant response rate (24%) was that the strike made traveling "too inconvenient." In that any of the other problems enumerated on the questionnaire could be considered "inconveniences," this must be considered the response of someone who was perturbed by all aspects of the strike but did not experience a particular difficulty.



MEAN COSTS:

NORMAL TRAVEL - \$0.70  
TRAVEL DURING STRIKE - \$0.90

Figure 12.

SURVEY OF FEEDER BUS RIDERS AVERAGE TRAVEL COST DURING AND AFTER  
A.C. TRANSIT STRIKE

PEAT, MARWICK, MITCHELL & Co.

FEBRUARY, 1975



Figure 13.

SURVEY of FEEDER BUS RIDERS DEPARTURE TIMES FROM HOME DURING AND AFTER

A.C. TRANSIT STRIKE

PEAT, MARINICK, MITCHELL & Co.

FEBRUARY 1975

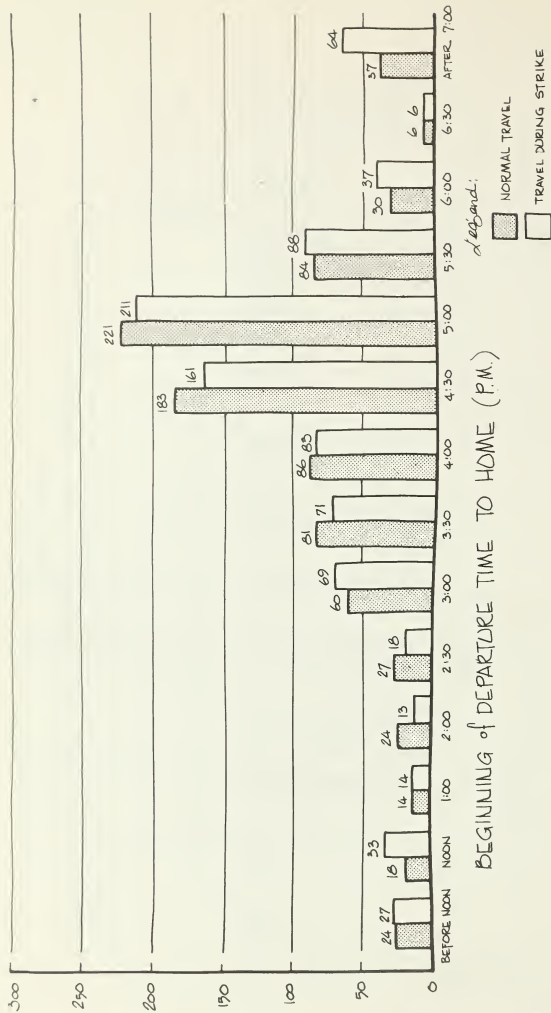


Figure 14.

SURVEY of FEEDER BUS RIDERS DEPARTURE TIMES TO HOME DURING AND AFTER

A.C. TRANSIT STRIKE

PEAT, MARWICK, MITCHELL & CO.

FEBRUARY, 1975



## Survey of Riders Using AC Transit Routes Parallel to BART

Methodology. The personal interview survey of riders on AC Transit routes parallel to BART was designed to determine:

- The impacts of the strike on AC Transit users' travel behavior.
- The modal alternatives chosen by AC Transit users during the strike, with particular emphasis upon diversions to BART.
- The relationship between the demographic characteristics of the users and their travel choices during the strike.

On Thursday, September 12, 1974, from 12 noon until 6:00 p.m., a survey was conducted of travelers boarding AC Transit buses at six points in downtown Oakland. The passengers boarding buses at these points were traveling on AC Transit lines that paralleled the BART Richmond-Fremont line from Berkeley to San Leandro. In this parallel route survey, the 366 interviews which were initiated resulted in 333 completions--a completion rate of 91%. The questionnaire used in this survey was shorter than the one used in the feeder bus survey and this probably contributed to the relatively high completion rate.

No weighting of the responses to this survey was performed because it is not possible to expand the sample of 333 respondents to reflect the AC Transit system's 200,000 daily passenger trips. Therefore, the estimates presented in this section represent the actual responses to the survey. A copy of the questionnaire with the number of usable responses to each question is presented in Appendix B.

As in the survey of riders of AC Transit feeder buses for BART, respondents were only considered in the analysis if they regularly made this same trip (considering origin, destination, and trip purpose) with a frequency of once per week or more. Travelers with lower frequencies were excluded because they did not make the trip with sufficient regularity to accurately recall their travel circumstances for this trip during the AC Transit strike. Of the 333 surveys completed, 283 (or 85%) involved trips with a frequency of once per week or more. All of the analyses of conditions during and after the strike which are presented in this section are based on these 283 responses.

Demographic Profile of Parallel Bus Route Riders. The demographic characteristics of respondents to the survey of riders on AC Transit routes parallel to BART is presented in Table 8. The AC Transit riders in this survey differ significantly from those using AC Transit as an access mode for BART. Females constitute 70% of the users (as opposed to 56% in the feeder bus survey). Elderly people comprise 13% of the users (as opposed to only 4% in the feeder bus survey). Lower income riders constitute 55% of the users

Table 8

DEMOGRAPHIC PROFILE OF AC TRANSIT RIDERS AT SIX SELECTED BOARDING POINTS<sup>a</sup>  
Survey of Riders on AC Transit Routes Parallel to BART

Gender	Age <sup>c</sup>	Household Income <sup>b</sup> -White					Household Income <sup>b</sup> -All Other Races				
		Lower	Middle	Upper	Not Reported	Total	Lower	Middle	Upper	Not Reported	Total
MALE	Young	6	3	1	2	12	15	7	6	4	32
	Working Age	7	13	6	0	26	9	10	1	0	20
	Elderly	4	3	0	0	7	2	1	0	0	3
	Subtotal	17	19	7	2	45	26	18	7	4	55
FEMALE	Young	8	8	6	0	22	32	18	1	11	62
	Working Age	15	19	7	8	49	39	18	7	4	68
	Elderly	18	0	2	0	20	10	1	0	1	12
	Subtotal	41	27	15	8	91	81	37	8	16	142
TOTAL		58	46	22	10	136	107	55	15	20	197
											333

a. Values in this table represent daily trips made by those interviewed in the parallel route survey--persons who normally use AC Transit as the principal mode.

b. Income Categories: Lower - below \$7,000 annually.  
Middle - \$7,000 to \$15,000 annually.  
Upper - above \$15,000 annually.

c. Age Categories: Young - under 25 years.  
Working Age- 25 years to 64 years.  
Elderly - over 64 years.

(in the feeder bus survey they constituted 32%), while upper income riders constitute only 12% of the users (as opposed to 28% in the feeder bus survey). Most significantly, white riders constitute only 41% of the users (as opposed to 76% of the feeder bus users). It must be emphasized, however, that these statistics are only representative of the six survey locations in downtown Oakland and do not necessarily reflect usage of the entire AC Transit system. Therefore, they should only be used in assessing the results of this survey and not to generalize an AC Transit systemwide ridership profile.

Impact of Strike on Trip Frequency. The impacts of the strike on trip frequency are summarized in Figure 15. About 35% of all trips were suppressed, as was the case in the survey of feeder bus riders. Those interviewed normally make 4.1 trips per week on AC Transit; during the strike they only made 2.8 trips per week (this 32% decrease in trip frequency is comparable to the 29% decrease experienced by feeder bus users). Of the 64% of the riders who normally make five trips or more per week, 70% made the same number of trips during the strike while 30% made fewer. Included in this 30% were 23% who suppressed all of their trips. For those who usually make less than five weekly trips, 65% made fewer trips (including 57% who suppressed their trips altogether), 31% made the same number of trips, and 4% made more trips during the strike.

About 100 of the total of 283 daily trips made by the respondents (or 35%) were suppressed during the strike (see Table 9). The 55% rate at which nonwork trips were suppressed was about four times greater than the 14% rate at which work trips were suppressed; these results are quite similar to those for the survey of feeder bus riders. About 81% of the trips by the elderly were for nonwork purposes and 55% of the total trips by this group were suppressed. In contrast to the results for the feeder bus survey, however, the suppression rate of 32% for the young was quite close to the average trip suppression rate of 35% for all travelers.

Impact of Strike on Travel Mode Choice. During the strike, the AC Transit user had three major travel alternatives:

- Utilize BART as an alternative to AC Transit
- Utilize another alternative mode
- Suppress the trip

Of the 183 respondents that continued making their normal trips, 41% utilized BART for their trip (see Table 10), 33% were driven by someone else, 11% drove, 7% walked, 4% hitchhiked, and 4% took taxis.

Interestingly, 72% of those who used BART walked to it and another 16% were driven. One of the groups with the lowest BART usage was the elderly, probably due to this group's difficulty in traveling to and from the system. In

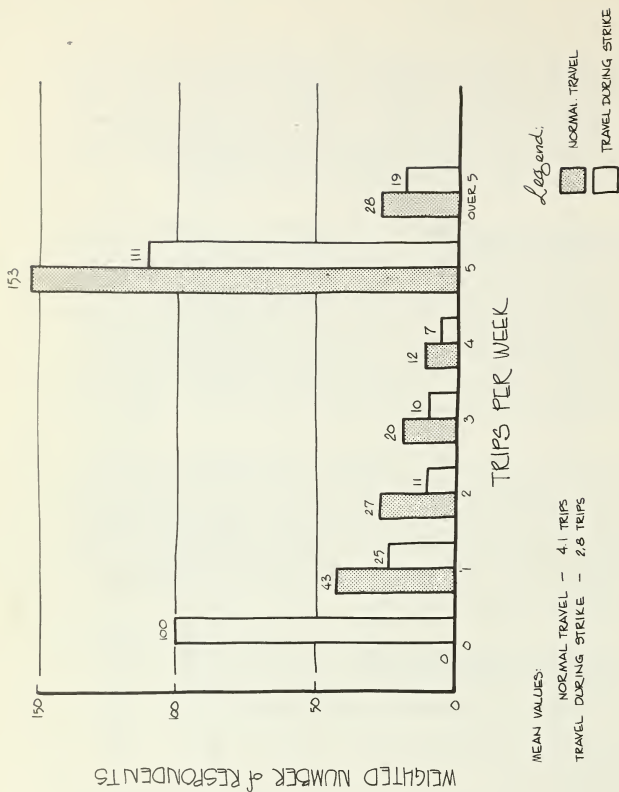


Figure 15.

SURVEY OF PARALLEL ROUTE RIDERS WEEKLY TRIP FREQUENCY DURING AND AFTER A.C. TRANSIT STRIKE

PEAT, MARQUICK, MITCHELL & CO.

FEBRUARY, 1975

Table 9

ANALYSIS OF SUPPRESSED TRIPS<sup>a</sup>  
Survey of Riders on the AC Transit Routes Parallel to BART

	1	2	3
	Total Number of Pre- strike Trips	Total Trips Suppressed During Strike	Proportion of Trips Suppressed During Strike (Col 1 ÷ Col 2)
<u>Gender</u>			
Male	87	28	32%
Female	196	72	37
	283	100	35
<u>Age</u> <sup>b</sup>			
Young	117	38	32
Working Age	135	45	33
Elderly	31	17	55
	283	100	35
<u>Ethnic Identification</u>			
White	107	40	37
All Other	176	60	34
	283	100	35
<u>Household Income</u> <sup>c</sup>			
Lower Income	140	48	34
Middle Income	88	32	36
Upper Income	26	7	27
Income Not Reported	29	13	45
	283	100	35
<u>Automobile Availability</u> <sup>d</sup>			
High Availability	35	14	40
Low Availability	53	14	26
No Automobile Available	195	72	37
	283	100	35
<u>Trip Type</u>			
Work	135	19	14
Nonwork	148	81	55
	283	100	35

- a. Values in this table represent daily trips made by those interviewed in the parallel route survey--persons who normally use AC Transit as the principal mode.
- b. Age Categories: Young - Under 25  
Working Age - 25-64  
Elderly - Over 64
- c. Household Income Categories: Lower - Below \$7,000 annually  
Middle - \$7,000 to \$15,000 annually  
Upper - Above \$15,000 annually
- d. Automobile availability was determined by questions 15, 16a, and 16b of the questionnaire (Appendix B). The high availability group consists of those who said use of an automobile was "not very" or "not at all inconvenient." The low availability group consists of those who said use of an automobile was "somewhat" or "very inconvenient." The group that had "no automobile available" includes those without automobiles and those with no driver's license.

Table 10

UTILIZATION OF BART DURING THE AC TRANSIT STRIKE<sup>a</sup>  
 Survey of Riders on the AC Transit Routes Parallel to BART  
 (For Respondents Continuing to Make Trips During the Strike)

	1	2	3
	Total Trips Not Suppressed During the Strike	Total Trips Util- izing BART As An Alternative Mode	Proportion of Trips Using BART As An Alternative Mode (Col 2 ÷ Col 1)
<u>Gender</u>			
Male	59	21	36%
Female	124	54	43
	183	75	41
<u>Age</u> <sup>b</sup>			
Young	79	37	47
Working Age	90	34	38
Elderly	14	4	29
	183	75	41
<u>Ethnic Identification</u>			
White	67	28	42
All Other	116	47	40
	183	75	41
<u>Household Income</u> <sup>c</sup>			
Lower Income	92	40	43
Middle Income	56	23	41
Upper Income	19	7	37
Income Not Reported	16	5	31
	183	75	41
<u>Automobile Availability</u> <sup>d</sup>			
High Availability	21	6	29
Low Availability	39	14	36
No Automobile Available	123	55	45
	183	75	41
<u>Trip Type</u>			
Work	116	47	40
Nonwork	67	28	42
	183	75	41

- a. Values in this table represent daily trips made by those interviewed in the parallel route survey--persons who normally use AC Transit as the principal mode.
- b. Age Categories: Young - Under 25  
 Working Age - 25-64  
 Elderly - Over 64
- c. Household Income Categories: Lower - Below \$7,000 annually  
 Middle - \$7,000 to \$15,000 annually  
 Upper - Above \$15,000 annually
- d. Automobile availability was determined by questions 15, 16a, and 16b of the questionnaire (Appendix B). The high availability group consists of those who said use of an automobile was "not very" or "not at all inconvenient." The low availability group consists of those who said use of an automobile was "somewhat" or "very inconvenient." The group that had "no automobile available" includes those without automobiles and those with no driver's license.

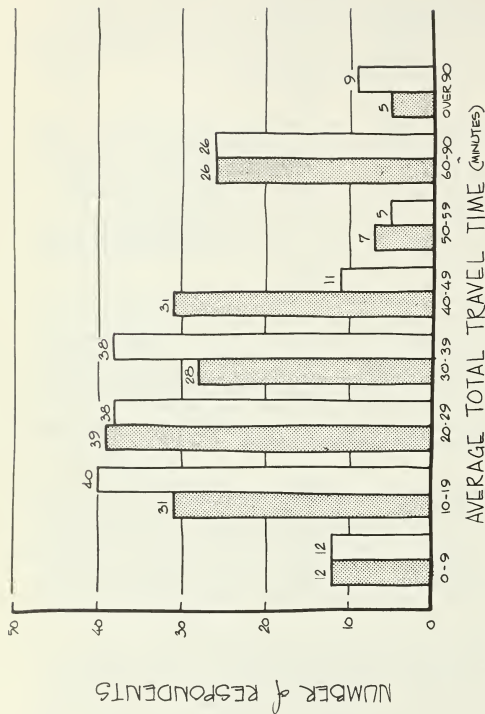
contrast, the young diverted to BART at a rate somewhat greater than average, perhaps because this group had the vigor to walk to the BART stations. The ability of the young to utilize an alternative mode (walking and BART) partially explains why this group experienced only an average trip suppression rate. In contrast, when the walking distances were greater and this group relied on feeder buses to access BART, it experienced a trip suppression rate significantly greater than the average. As might be expected, diversion to BART was inversely related to automobile availability.

Impact of Strike on Travel Times. The strike had a very different impact on the travel times of respondents to the parallel route survey than it did on the travel times of respondents to the feeder bus survey. As shown on Figure 16, average travel times decreased from 35.9 minutes to 33.5 minutes (a decrease of 7%) as opposed to the 19% increase in travel time experienced by feeder bus users. Of the respondents to the parallel route survey, 39% reported an average travel time savings during the strike of 29 minutes, 23% reported no change in travel time, while 38% reported their trips lengthened by an average of 28 minutes.

This reduction in the average travel time for users of parallel bus routes can be explained by several factors. First, those users who diverted to BART experienced a significant increase in their line-haul travel speed (as opposed to local bus), apparently without a major increase in their access time. Second, those users who diverted to automobile also generally tended to decrease their travel times. Finally, it should be recognized that the base mode for users of the feeder bus was BART with its relatively high line-haul speed, whereas the base mode for users of the parallel bus routes was local buses with their relatively low travel speeds.

Impact of Strike on Travel Costs. While travel times were beneficially affected on the average, respondents to the survey on parallel bus routes reported a sharp increase in travel costs during the strike (see Figure 17). Before the strike, the average trip cost was \$0.40; this rose to \$0.85 during the strike. While 21% of the users realized an average savings of \$0.22 during the strike and 34% experienced no cost change, 45% of those who normally used AC Transit had an average one-way travel cost increase of \$1.09 during the strike.

Problems Perceived by Travelers During the Strike. Respondents to the survey on parallel bus routes were asked if they encountered any problems or difficulties during the strike. Of the 283 persons asked this question, 197 answered affirmatively, each providing an average of 1.04 problems. The most prevalent problem experienced by 68% of the respondents was the difficulty of using other transportation modes. The group citing this problem most frequently was the young; 77% of the respondents in this group mentioned this problem. Other groups frequently mentioning this problem were the middle



MEAN TRAVEL TIMES:

NORMAL TRAVEL - 33.9 MINUTES

TRAVEL DURING STRIKE - 33.5 MINUTES

Legend:

■ NORMAL TRAVEL

□ TRAVEL DURING STRIKE

Figure 16.

SURVEY of PARALLEL ROUTE RIDERS AVERAGE TRAVEL TIME DURING AND AFTER  
A.C. TRANSIT STRIKE

PEAT, WARWICK, MITCHELL & CO.

FEBRUARY, 1975



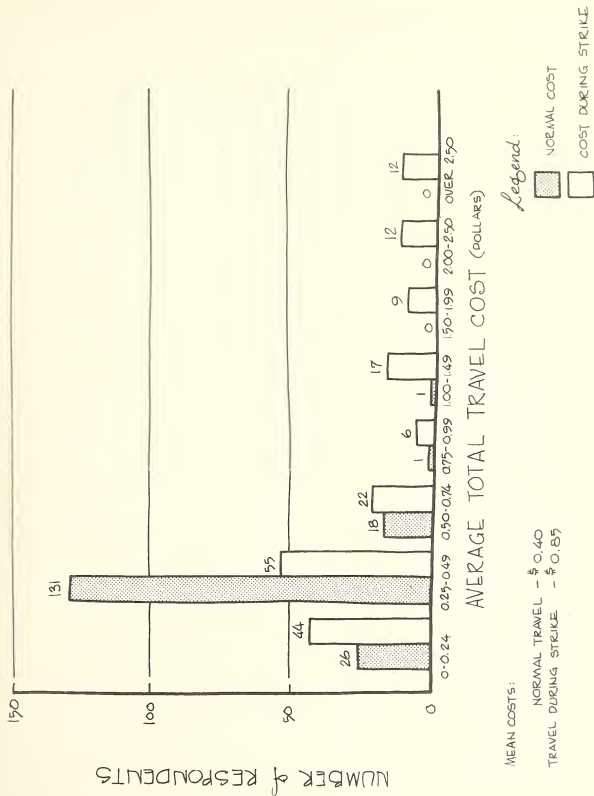


Figure 17.

SURVEY OF PARALLEL ROUTE RIDERS AVERAGE TRAVEL COST DURING AND AFTER  
A.C. TRANSIT STRIKE

PEAT, MARQUICK, MITCHELL & CO.

FEBRUARY, 1975

income group (75%), the upper income group (73%), and the low automobile availability group (72%).

The second most commonly mentioned problem was that alternative transportation involved too great a cost. An average of 18% of the respondents mentioned this issue with 32% of the elderly group and 22% of the lower income group identifying this issue. This is quite understandable, since 50% of the respondents to the parallel route survey were in the lower income group, 80% of the elderly were in the lower income group, and the average normal fare for all persons surveyed in the parallel route survey was only \$0.40 as noted in the discussion on travel costs.

#### IV. CONCLUDING OBSERVATIONS

This chapter includes:

- Individual comments on, and responses to, the strike.
- Information on travel behavior during the strike obtained from an on-board survey of transbay bus travelers eight weeks after the strike ended and six weeks after the initiation of transbay BART service.
- A comparison of the AC Transit strike surveys' results with results from a similar study.
- Findings and conclusions of this study.

##### Human Implications of the AC Transit Strike

In both surveys undertaken in this study, respondents were asked to comment on how the strike personally affected them. This section presents representative responses to the surveys and selected items from local newspaper interviews conducted during the strike. These comments and newspaper excerpts illustrate some of the major impacts of the AC Transit strike on both individuals and the community as a whole.

Survey responses indicated that most groups normally using AC Transit suffered varying degrees of difficulty due to the strike, ranging from mild inconvenience to serious problems resulting in severe hardships. Newspaper articles written during the strike confirm this. In interviews with insurance brokers, secretaries, teachers, and the elderly, the newspapers clearly related the strike's negative impacts on the travel patterns of various groups. In addition, shopkeepers in Oakland and Berkeley reported a significant decrease in sales as a result of the strike.

In the surveys of feeder bus and parallel route passengers, the most prevalent comment was that the loss of bus service forced former AC Transit riders to do excessive walking. Comments ranged from "I had to walk a lot" and "I had to walk everywhere" to "I had to walk 40 blocks a day" and "I had to walk a half hour." Newspaper interviews reiterated this concern, especially one in the August 1 Oakland Tribune about a nurse from Castro Valley who stated that she was forced to walk 3.2 miles between her home and work during the strike.

The strike had a major impact on the elderly. In the survey of those using AC Transit on routes parallel to BART, one elderly woman related "I could not get anyone to take me out." In the July 18 issue of the Oakland Tribune, a leader of East Bay senior citizen groups related that the bus is the only means of transportation for many elderly persons. She added, "Not all

\* of them have family or friends with cars. It is just another bad situation for them."

School age travelers were also highly affected by the strike. In the survey of AC Transit riders on routes parallel to BART, one individual stated, "I almost got kicked out of school for tardiness" while another "had to drop out of school." The July 17 issue of the Montclairion reported the impact on the schools themselves. The article stated, "Of almost 12,000 students enrolled (in the Oakland School District's summer school), about 20% are finding it difficult or impossible to get to school because of the strike." This loss of attendance caused the Oakland School District to lose "\$15,000 a day in state aid."

The merchants of downtown Oakland and Berkeley were another major identifiable group adversely affected by the strike. Although this group was not represented in either the feeder bus or the parallel route surveys, the July 25 issue of the Oakland Tribune discussed a Retail Merchants, Inc., survey of retail outlets. Comments in this survey included "Traffic is definitely off," "Business is real bad, off 23% to 29%," and "We are off about 9% for the first three weeks of the strike but our chain is up 12%."

Although many people and institutions were adversely affected by the strike, most people adapted. As reported in the July 4 issue of the San Francisco Chronicle, "Pam Richmond of the Toll Bridge Administration said, 'Somehow they have reapportioned themselves so that we're not getting jam-ups on the three major East Bay feeder highways--Eastshore 80, MacArthur 580, and Nimitz 17'." In addition, the July 4 issue of the Oakland Tribune related, "At the Social Security Administration's Western Regional Placement Center, some 45% of the 1,800 workers live in the East Bay, and on Monday (July 1, first day of the strike) there were 187 strike-related absences. Tuesday, that figure was down to 33, and yesterday it was just 14."

As a final comment, the July 18 issue of the San Francisco Chronicle contained a statement from Bernard Averbuch, Director of the Market Street Development Project. "One positive aspect of the strike . . . is that I get a lot of people saying, 'I hope BART (transbay service) gets started right away.' They are anxious now."

#### Alternative Travel Choices of Transbay Bus Travelers

In October 1974, the Transportation System and Travel Behavior Project of the BART Impact Program conducted a mail-back survey of travelers using AC Transit and Greyhound buses for transbay trips. This survey was designed to assess the impacts resulting from the start of transbay BART services, and it was conducted six weeks after the service began and eight weeks after the AC Transit strike ended.

A sample of 2,000 bus travelers was included in the mail-back survey. These 2,000 represent a daily total of 17,000 bus trips that were being made from San Francisco to the East Bay that October, 14,000 of which were made on AC Transit.\* One of the questions asked of AC Transit riders was: "During the AC Transit strike . . . how did you make the main part of the trip you are making today?"

Responses to this question showed that, not surprisingly, the great majority of travelers who were riding transbay AC Transit buses at the time of the mail-back survey had used the automobile to make the trip during the strike. About 26% of the travelers had driven alone, and 60% had traveled by car with other people. The remaining 14% said they did not make the trip during the strike. Only a very small number of people used Greyhound bus, taxi, motorcycle, or other means.

Analysis of the mail-back survey results by trip purpose shows that the suppression of trips for nonwork purposes was much greater than the suppression of trips for work purposes. Of the 1,400 daily transbay bus patrons traveling to or from home for nonwork purposes, 46% did not make the trip during the strike. Contrastingly, only 9% of transbay travelers using the bus for work trips ceased making the work trips altogether during the strike. These trip suppression rates are slightly lower than those experienced by respondents to either the feeder bus survey or the parallel route survey, but they are of comparable magnitude.

#### Comparison of Findings with Those of Similar Studies

A thorough review of applicable literature was conducted to identify comparable studies of previous transportation system stoppages. The only relevant study identified was conducted by the New York City Transit Authority (NYCTA).\*\*

The New York City (NYC) transit strike began on Saturday, January 1, 1966, and partial service was restored on Thursday, January 13, 1966. The strike, by 40,000 operating employees, involved one public and five private bus companies plus the NYCTA subway system and halted virtually all public mass transportation in the boroughs of Manhattan, The Bronx, Queens, and Brooklyn. The strike affected the lives of all 16,000,000 New York metropolitan area residents--particularly the 8,000,000 living in New York City; it placed severe restrictions on the mobility of the 5,000,000 daily patrons of the organizations whose employees were on strike.

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\*Complete descriptions of both the survey methodology and results will be given in forthcoming reports of the Transportation System and Travel Behavior Project of the BART Program.

\*\*The Effect of the 1966 New York City Transit Strike on the Travel Behavior of Regular Transit Users, New York City Transit Authority, New York, New York, 1966.

- Selected results of the NYC study are compared with results of the survey of AC Transit users on routes parallel to BART in Table 11. To appreciate this comparison, differences between the two strikes and their corresponding surveys should be noted:

- The AC Transit strike lasted 62 days, five times as long as the NYC strike. This extended duration provided travelers with time to determine the most efficient alternative travel patterns. In contrast, travelers in NYC were still modifying their travel responses to the strike when it ended, and travel patterns may have been altered further had the strike continued for a month or longer.
- The NYC study involved a major telephone survey which randomly contacted 12,000 households representing a wide range of socioeconomic characteristics. Thus, the results of this survey reflect the behavior of a relatively broad cross-section of NYC transit users. The surveys of AC Transit riders focused on particular market segments and are, therefore, not necessarily representative of the behavior of all AC Transit users.

Despite these differences, the similarities and contrasts in traveler responses during the two strikes are worth noting:

- During the New York strike, about 20% of the work and 41% of the nonwork trips normally made on transit were suppressed. The three surveys of the AC Transit strike impacts indicate that between 9% and 21% of the work and 46% and 59% of the nonwork trips were suppressed.
- Of those trips which were continued during the New York strike, 51% were made by automobile and 10% were walking trips. The AC Transit strike surveys indicated that during the strike about 68% of the travelers used an automobile and 8% walked.
- Prior to the strike, about 200,000 daily rides were made on AC Transit; about 65,000 of these were transbay, about 15,000 feeder trips to BART, and the remaining 120,000 were trips within the East Bay made solely on AC Transit. Of these 120,000 trips, about 35% or 40,000 were suppressed during the strike and the remaining 80,000 were unsuppressed. About 15% or 12,000 of these 80,000 unsuppressed trips were diverted to BART. In New York, about 7% of the transit riders who continued to travel diverted to commuter trains.

Table 11

COMPARISON OF EFFECTS ON TRAVEL BEHAVIOR  
1966 New York City Transit Strike vs. 1974 AC Transit Strike

	<u>New York City<sup>a</sup></u>	<u>AC Transit<sup>b</sup></u>
<u>Characteristics of Transit System and Strike</u>		
Population Served by Suspended Transit	8,000,000	1,000,000
Daily Transit Patronage	5,000,000	200,000
Duration of the Strike	January 1-13, 1966	July 1 - August 31, 1974
Number of Working Days During the Strike	9	45
<u>Percent of Persons Suppressing All Trips by Specific Type</u>		
Workers		
Suppressed All Trips during Entire Strike	15%	--
Traveled at First, then Stopped	<u>5</u>	--
Assumed Stable Condition	20%	9%-21%
Nonworkers	41%	46%-59%
<u>Alternate Travel Choice</u>		
Automobile	51%	68%
Bus (Chartered by Employers)	11	0
Taxi	12	4
Train <sup>c</sup>	7	15
Walk	10	8
Other (i.e., hitchhike, bicycle)	2	5
Stayed All Night Near Work	<u>7</u>	<u>0</u>
Total	100%	100%

- a. Source: The Effect of the 1966 New York City Transit Strike on the Travel Behavior of Regular Transit Users, New York City Transit Authority, New York, New York, 1966.
- b. Source: PMM&Co. estimates based on this study.
- c. Commuter train in New York metropolitan area and BART in San Francisco metropolitan area.

- Contrasts in the responses to the two strikes are also of interest. New York area transit users were subjected to the hardship of having to spend the night at or near their place of work; AC Transit users were not. Employers in the New York area responded by chartering private buses to assist their employees in traveling to work; San Francisco area employers did not. Finally, taxis were an important alternative mode in the New York strike, but were relatively unimportant during the AC Transit strike.

### Findings and Conclusions

Based on the results presented in Chapters II and III, the following findings and conclusions can be developed:

#### Impacts of Strike on BART

- Despite an increase of 7% in BART patronage, the average fare decreased 11% from \$0.5600 to \$0.5006, and consequently, the average daily BART revenue declined 4% from \$22,600 to \$21,600 on the East Bay lines. The loss of revenue can largely be attributed to the loss of long distance riders on the Concord line where the average prestrike fare was approximately \$0.63--12.5% above the average--and the gain of shorter distance riders on the Richmond and Fremont lines.
- At the four BART stations where the survey of persons using AC Transit as a feeder to BART was conducted, 35% of those normally transferring from BART to AC Transit suppressed their trips during the strike. An additional 14% of the respondents who normally transferred from BART to AC Transit ceased using BART and utilized alternative modes because of the lack of feeder bus service. If this 49% loss of normal BART to AC Transit transfer patrons applied to the entire AC Transit service area, and assuming that 2,000 daily BART travelers used AC Transit for both access to and egress from BART, then BART lost a total of approximately 6,500 daily person trips due to the lack of feeder bus service.
- In addition, BART lost approximately 3,000 daily person trips because of the cessation of AC Transit transbay service from the MacArthur BART Station to San Francisco. Assuming that 10% of these trips were already accounted for in the patronage reduction resulting from the cessation of feeder bus service suggests that BART lost an additional 2,700 daily person trips because of the cessation of transbay AC Transit service from the MacArthur Station.



- Based on the above, about 9,200 travelers who normally used BART ceased doing so during the AC Transit strike. However, BART patronage figures indicate that patronage actually increased during the strike by 2,800 daily trips. These results suggest that about 12,000 travelers who normally used AC Transit diverted to BART during the strike. This is about 10% of the daily prestrike AC Transit ridership of 120,000 which was neither transbay nor feeder to BART.

#### Impacts of Strike on Transbay Travel

- Prior to the strike, about 65,000 daily transbay trips were made on AC Transit (about 32,500 trips in each direction). During the strike, about 14% of these trips were suppressed and the remainder were made largely by automobile (26% of the travelers drove alone and 60% traveled by car with other people).
- Average daily westbound vehicle trips on the San Francisco-Oakland Bay Bridge (Bay Bridge) increased about 6% from 92,600 to 98,500. Average daily westbound vehicle trips on the San Mateo-Hayward Bridge increased about 15% from 14,800 to 17,100. Finally, average daily westbound vehicle trips on the Richmond-San Rafael Bridge increased about 6% from 10,800 to 11,500. In total, average daily westbound vehicle trips across the Bay increased by 8,900 (or 7.5%) during the strike.
- One consequence of the overall increase in vehicle traffic on the Bay Bridge was a significant broadening of the peak hours. The morning prestrike peak of about 9,300 vehicles per hour lasted about 30 minutes from 7:00 a.m. to 7:30 a.m. The midstrike morning peak, with only about 8,400 vehicles per hour, lasted about 120 minutes from 6:00 a.m. to 8:00 a.m. Traffic congestion and delays on the Bay Bridge increased significantly during the strike, particularly during the peak periods.
- Greyhound patronage rose from 4,700 to 5,300 daily trips (or about 13%) in the westbound direction from the Concord/Walnut Creek/Orinda corridor to San Francisco. It is believed that most of the riders diverting to Greyhound had previously used BART and transferred to transbay AC Transit buses at the MacArthur Station.

### Impacts of the Strike on East Bay Travelers

- Survey respondents indicated that 35% of the trips normally made on AC Transit were not made during the strike. The rate of trip suppression for nonwork trips was about three times the rate of trip suppression for work trips. Not surprisingly, this trip suppression was largely the result of the unavailability of a feasible alternative travel mode.
- The alternative travel choices reported by respondents to the feeder bus and parallel route surveys are summarized in Table 12. About one-half of those who had previously used the bus to access BART continued to use BART; walking was their primary access mode with the automobile second. About one-quarter of those using bus routes parallel to BART diverted to BART (within the total AC Transit service area, about 10% of the riders who previously used AC Transit for an East Bay trip diverted to BART). Walking was the primary access mode for those who diverted to BART with the automobile second.
- The strike had a very adverse effect on elderly persons. About 60% of the trips of elderly respondents to the feeder bus survey were suppressed--almost twice the average; and 55% of the trips of elderly respondents to the parallel route survey were suppressed. Most of the elderly do not have the use of an automobile, and many are in the lower income group. And while the young can always walk, the elderly may have no alternative but to rely on a friend or relative for occasional transportation.
- Respondents to the survey of feeder bus users reported an increase in average travel times and travel costs. To ensure arriving at their destination on schedule and to avoid traffic congestion, many respondents altered their departure times from home and--to a lesser extent--to home. The major problem or difficulty which these respondents reported was the unavailability of an alternative transportation service.
- Respondents to the survey of users of AC Transit routes parallel to BART reported a decrease in their average travel times but a major increase in their travel costs. These respondents reported two major problems or difficulties were encountered during the strike: (1) the unavailability of an alternative transportation service, and (2) the relatively high costs which these respondents had to pay for an alternative transportation service during the strike.

Table 12

## TRAVEL CHOICES DURING AC TRANSIT STRIKE

<u>Respondents to Surveys</u>	<u>Principal Mode of Travel during Strike</u>		<u>Access Mode for BART Users</u>	
	<u>Mode</u>	<u>Percent of Usage</u>	<u>Mode</u>	<u>Percent of Usage</u>
Feeder Bus Riders (Normal Bus and BART Patrons)	BART	51%	Automobile, Driver, or	
	Automobile, Driver, or		Passenger	37%
	Passenger	11	Walk	51
	Other Mode	3	Other Mode	12
	Trip Suppressed	<u>35</u>		<u>      </u>
	Total	100%	Total	100%
Parallel Route Riders (Normal Bus Patrons)	BART	27%	Automobile, Driver, or	
	Automobile, Driver, or		Passenger	18%
	Passenger	28	Walk	72
	Other Mode	10	Other Mode	10
	Trip Suppressed	<u>35</u>		<u>      </u>
	Total	100%	Total	100%



Appendix A

QUESTIONNAIRE AND RESPONSES

Survey of Riders on AC Transit Feeder Routes to BART



## Appendix A

### QUESTIONNAIRE AND RESPONSES Survey of Riders on AC Transit Feeder Routes to BART

This appendix contains a copy of the personal interview survey questions that were asked of persons using AC Transit as a feeder to BART. In the left column of the questionnaire, the weighted number of respondents who were asked each question is indicated. Specific responses to each element of the questions are also included. The weighting expands the actual number of questionnaire respondents to the entire daily population of those using AC Transit as an egress mode from the four BART stations involved in the survey (El Cerrito Plaza, Fruitvale, Rockridge, and Hayward).

## AC TRANSIT / BART TRAVELER'S STUDY

SURVEY QUESTIONNAIRE  
FOR FEEDER BUS LINES

Market Facts Repr. \_\_\_\_\_

Field Station: Oakland \_\_\_\_\_

Date September 11, 1974 \_\_\_\_\_

Time Interview Began \_\_\_\_\_ AM/PM

5				7
8	9	2	0	2
			4	12

BART Station: El Cerrito 1 157 Fruitvale 2 686  
 Rockridge 3 268 Hayward 4 492

13

Hello, I am \_\_\_\_\_ from Market Facts, an opinion research company. We are conducting a survey on transportation and would like to get your opinions and ideas. I would like to ask you a few questions about this topic, if I may.

1. Have you just left BART? (Ask only if this information is not obvious.)

(14-15  
Open)

Yes 1604

No (TERMINATE)

2. What AC bus route will you be boarding?

16 

--	--	--

 18

(Route number or numbers)

3. What is the main purpose of this trip today?

Work ☐ 1 888Visit a recreation area ☐ 5 27  
or facilitySchool/College ☐ 2 237Touring ☐ 6 20Shopping ☐ 3 148Other ☐ 7 156Visit with friends ☐ 4 126  
or relatives

(Specify)

4. Where are you coming from now?

Home ☐ 1 864Other ☐ 3 97Place mentioned ☐ 2 640  
in Question 3

(Specify)

NO ANSWER 3

5. At which station did you get on BART to come here?

Richmond (23) ☐ 1 28Fremont (24) ☐ 1 96El Cerrito Del Norte ☐ 2 41Union City ☐ 2 42El Cerrito Plaza ☐ 3 24South Hayward ☐ 3 46North Berkeley ☐ 4 26Hayward ☐ 4 86Berkeley ☐ 5 166Bay Fair ☐ 5 46Ashby ☐ 6 65San Leandro ☐ 6 101Concord ☐ 7 53Coliseum ☐ 7 42Pleasant Hill ☐ 8 40Fruitvale ☐ 8 70Walnut Creek ☐ 9 70Lake Merritt ☐ 9 63Lafayette ☐ 0 5212th St. Oakland ☐ 0 120Orinda ☐ X 7119th St. Oakland ☐ X 191Rockridge ☐ R 21Macarthur ☐ R 45

6. How did you get to the (READ NAME FROM QU. 5) station?

Bus ☐ 1 414

Motorbike or

☐ 25Drove Car ☐ 2 254

Motorcycle

☐ 6 2Car Passenger ☐ 3 222

Walk

☐ 7 252Taxi ☐ 4 5

Hitchhike

☐ 8 7Bicycle ☐ 5 37

Other

☐ 9 6

(Specify)



7. Do you make this trip the same way in both directions?

1604 Yes ☐ 1 1164 No ☐ 2 434 28  
NO ANSWER 6

8. How many minutes does it usually take you to make this entire one-way trip from where you start to your final destination?

1604 Less than ☐ 1 43 40-49 minutes ☐ 5 332  
10 minutes ☐ 2 146 50-59 minutes ☐ 6 106  
10-19 minutes ☐ 3 297 1 hr. to 1-1/2 hrs. ☐ 7 232 29  
20-29 minutes ☐ 4 389 More than 1-1/2 hrs. ☐ 8 54  
30-39 minutes  
NO ANSWER 6

9. How much money does it usually cost you to make this same one-way trip?

1604 0-24 cents ☐ 1 12 \$1.00 - \$1.49 ☐ 5 129  
25-49 cents ☐ 2 563 \$1.50 - \$1.99 ☐ 6 28 30  
50-74 cents ☐ 3 504 \$2.00 - \$2.50 ☐ 7 5  
75-99 cents ☐ 4 349 More than \$2.50 ☐ 8 13  
NO ANSWER 1

10. About what time do you usually leave home to make this trip?

1604 see Table B 31    33  
usable responses 1568 AM/PM (CIRCLE ONE)  
NO ANSWER 36

11. About what time do you usually start your return trip to home?

1604 see Table B 34    36  
usable responses 1517 AM/PM (CIRCLE ONE)  
NO ANSWER 87

- 12a. How many trips do you usually make each week for this purpose when the AC transit buses are running?

1604 191 ☐ 0 (SKIP TO Q. 21) ☐ 4 82  
193 ☐ 1 ☐ 5 864  
96 ☐ 2 ☐ 6 (or more) 66 37  
112 ☐ 3

- 12b. During the transit strike, how many trips did you make each week for this purpose?

1413 378 ☐ 0 (REMEMBER THIS FOR INSTRUCTION BEFORE Q. 14a)  
(1604-191) 76 ☐ 1 54 ☐ 4 38  
40 ☐ 2 654 ☐ 5  
54 ☐ 3 37 ☐ 6 (or more)

(INTERVIEWER: RECORD WHETHER ANSWER TO QUESTION 12b IS MORE THAN, EQUAL TO, OR LESS THAN THE ANSWER TO QUESTION 12a)

1413 Same ☐ 843  
More ☐ 22 39  
Fewer ☐ 548

13a. Did the AC Transit Strike cause any problems or difficulties in making your usual trip?

1413

Yes ☐ 1 865 546 No ☐ 2 (GO TO INSTRUCTION BEFORE QU. 14a)

40

13b. What kinds of problems or difficulties did you have?

865

Difficulty in using another form of transportation

☐ 1 442

Alternative transportation too expensive

☐ 2 186

Too much travel time

☐ 3 97

Too much congestion

☐ 4 92

Too inconvenient

☐ 5 204

41

42

(PLEASE EXPLAIN)

Other

☐ 6 21

(SPECIFY)

NOTE: 944 responses were given by the  
855 persons interviewed

WATCH! (IF ANSWER TO QU. 12b was "O", SKIP TO QU. 21)

14a. During the transit strike, did you use BART for this trip?

915  
(1413-498)

Yes ☐ 1

721

No ☐ 2

194

43

(44-46  
Open)

(IF ANSWER TO QU. 14a IS "YES")

(IF ANSWER TO QU. 14a IS "NO,"  
ASK QU. 14c)

14b. What was the principal way that you got from this BART station to where you were going during the transit strike?

721

(RECORD ONE ANSWER ONLY)

(47)

Bus

☐ 1 0

Drive car alone

☐ 2 84

Driver of car with passengers

☐ 3 28

Car passenger

☐ 4 190

Taxi

☐ 5 12

Bicycle

☐ 6 0

Motorbike or Motorcycle

☐ 7 2

Walk

☐ 8 270

Hitchhike

☐ 9 36

Other

☐ 0 35

(Specify)

14c. What was the principal way you made this trip?

194

(RECORD ONE ANSWER ONLY)

(48)

☐ 1 4☐ 2 57☐ 3 16☐ 4 52☐ 5 3☐ 6 5☐ 7 0☐ 8 16☐ 9 5☐ 0 6

(49-50  
Open)

(ASK QU. 15 IF ANSWER TO QUESTION 14b OR 14c WAS "DRIVE CAR ALONE" OR "DRIVER OF CAR WITH PASSENGERS")

15. Did someone else have to do without this car because you had it?

215 Yes ☐ 1 79 (SKIP TO QU. 17) No ☐ 2 136 (SKIP TO QU. 17) 51

(ASK QU. 16a AND 16b IF ANSWER TO QUESTION 14b OR 14c WAS "CAR PASSENGER". IF NOT "CAR PASSENGER" -- SKIP TO QU. 17)

16a. Did someone have to make a special trip to drive you there?

202 Yes ☐ 1 156 No ☐ 2 46 52

16b. Did you belong to a car pool?

202 Yes 41 ☐ 1 No 161 ☐ 2 (SKIP TO QU. 17) 53

16c. Did you join an existing car pool, or did you set up a new arrangement?

41 Existing car pool 12 ☐ 1 New arrangement 29 ☐ 2 54

17. During the transit strike, how much time did a one-way trip usually take from where you started to your final destination?

915 Less than 10 minutes ☐ 1 15 40-49 minutes ☐ 5 150  
10-19 minutes ☐ 2 58 50-59 minutes ☐ 6 112  
20-29 minutes ☐ 3 127 1 hr. to 1-1/2 hrs. ☐ 7 208  
30-39 minutes ☐ 4 187 More than 1-1/2 hrs. ☐ 8 58 55

18. How much did this same one-way trip cost during the transit strike?

915 (IF CAR DRIVER, ASK FOR OUT OF POCKET COSTS -- GAS, PARKING AND TOLLS)

0-24 cents ☐ 1 55 \$1.00-\$1.49 ☐ 5 97  
25-49 cents ☐ 2 255 \$1.50-\$1.99 ☐ 6 83 56  
50-74 cents ☐ 3 250 \$2.00-\$2.50 ☐ 7 29  
75-99 cents ☐ 4 71 More than \$2.50 ☐ 8 42

19. About what time did you usually leave home during the transit strike to make this trip? See Table 9

915 usable responses 906 AM/PM (CIRCLE ONE) 57 ☐ ☐ ☐ 59  
NO ANSWER 9

20. About what time did you usually start your return trip to home during the transit strike? See Table 9

915 usable responses 895 AM/PM (CIRCLE ONE) 60 ☐ ☐ ☐ 62  
NO ANSWER 20

In order to analyze the data you have given us, we also need some information about you and your family.

21. What is your age?

1604 Under 18 ☐ 1 120 45 - 54 ☐ 5 192  
18 - 24 ☐ 2 474 55 - 64 ☐ 6 153  
25 - 34 ☐ 3 393 65 or over ☐ 7 66 63  
35 - 44 ☐ 4 201

22. Do you have a valid driver's license?

1604

Yes ☒ 1 1020

No ☐ 2 (SKIP TO QU. 24)

64

584

23a. How many motor vehicles, if any, are there in your household?

1020

115 ☐ 0 (SKIPTOQU. 24) ☐ 2 270

470 ☐ 1

☐ 3 (or more) 165

65

23b. How much would it inconvenience your household if you used that (one of these) vehicle(s) to make this trip? (READ ALTERNATIVES)

905

Very inconvenient

☐ 1 306

Somewhat inconvenient

☐ 2 131

Not very inconvenient

☐ 3 62

Not at all inconvenient

☐ 4 406

66

24. What is the approximate range of your total family income? (SHOW CARD)

1604

A. Under \$5,000 ☐ 1 279 D. \$10,000 - \$14,999 ☐ 4 348

B. \$5,000 - \$6,999 ☐ 2 199 E. \$15,000 - \$24,999 ☐ 5 320

C. \$7,000 - \$9,999 ☐ 3 245 F. \$25,000 or more ☐ 6 103

67

NO ANSWER 110

Thank you very much for your interest and cooperation!

Time interview ended \_\_\_\_\_ AM/PM

6<sup>30</sup> - 9<sup>30</sup> a.m. 485

9<sup>30</sup> a.m. - 2<sup>30</sup> p.m. 475

2<sup>30</sup> - 6<sup>30</sup> p.m. 644

# ETHNIC IDENTIFICATION

white 1223

spanish american 72

black 251

oriental 58

# GENDER

male 707

female 897

# LOCATION

rockridge 268

el cerrito 157

fruitvale 686

hayward 493

Appendix B

QUESTIONNAIRE AND RESPONSES

Survey of Riders on AC Transit Routes Parallel to BART



## Appendix B

### QUESTIONNAIRE AND RESPONSES

#### Survey of Riders on AC Transit Routes Parallel to BART

This appendix contains a copy of the personal interview survey questions that were asked of persons using AC Transit on routes parallel to BART. In the left column of the questionnaire, the number of respondents who were asked each question is indicated. Specific responses to each element of the questions are also included.

AC TRANSIT - BUS TRAVELER'S STUDY  
SURVEY QUESTIONNAIRE  
FOR PARALLEL ROUTES

Market Facts Repr. \_\_\_\_\_

Field Station OaklandDate September 12, 1974

Time Interview Began \_\_\_\_\_ AM/PM

			5				7
8	9	2	0	2	4		12

Hello, I am \_\_\_\_\_ from Market Facts, an opinion research company. We are conducting a survey on transportation and would like to get your opinions and ideas. I would like to ask you a few questions about this topic, if I may.

(13 - 15 open)

1. What AC bus route will you be boarding?

\_\_\_\_\_

(Route number or numbers)

16 

--	--	--

 18

2. What is the main purpose of this trip today?

334

Work ..... ☐ 1 136School/College ..... ☐ 2 42Shopping ..... ☐ 3 54Visit with friends or relatives ..... ☐ 4 19Visit a recreation area or facility ..... ☐ 5 3Touring ..... ☐ 6 2 

--

 19Other BUSINESS ..... ☐ 7 28 

--

 20Other DR./DENTIST ..... ☐ 8 24

(Specify) OTHER \_\_\_\_\_ - 26

3. Where are you coming from now?

334

Home ..... ☐ 1 64Place mentioned in Question 2. .... ☐ 2 242Other \_\_\_\_\_ 27 ☐ 3 

--

 21(Specify) 

--

 22

4. Do you make this trip the same way in both directions?

334

Yes ☐ 1 267No ☐ 2 61 NO ANSWER 6 28

5. How many minutes does it usually take you to make this entire one-way trip from where you start to your final destination?

334

Less than 10 minutes .. ☐ 1 2110-19 minutes ..... ☐ 2 6720-29 minutes ..... ☐ 3 6330-39 minutes ..... ☐ 4 6340-49 minutes ..... ☐ 5 5250-59 minutes ..... ☐ 6 10 291hr. to 1-1/2 hrs. .... ☐ 7 45More than 1-1/2 hrs. ... ☐ 8 0

NO ANSWER 5

6. How much money does it usually cost you to make this same one-way trip?

334

0 - 24 cents ..... ☐ 1 7425 - 49 cents ..... ☐ 2 22650 - 74 cents ..... ☐ 3 2975 - 99 cents ..... ☐ 4 1\$1.00 - \$1.49 ..... ☐ 5 2\$1.50 - \$1.99 ..... ☐ 6 1 30\$2.00 - \$2.50 ..... ☐ 7 0More than \$2.50 ..... ☐ 8 1



- 7a. How many trips do you usually make each week for this purpose when the AC transit buses are running?

(31 - 36 open)

334

51 ☐ 0 (SKIP TO QU. 14) 12 ☐ 4  
 43 ☐ 1 153 ☐ 5  
 27 ☐ 2 28 ☐ 6 (or more)  
 20 ☐ 3

37

- 7b. During the transit strike, how many trips did you make each week for this purpose?

283

(334-51)

100 ☐ 0 (REMEMBER THIS FOR INSTRUCTIONS BEFORE Qu. 9a)  
 25 ☐ 1 7 ☐ 4  
 11 ☐ 2 111 ☐ 5  
 10 ☐ 3 19 ☐ 6 (or more)

38

(INTERVIEWER: RECORD WHETHER ANSWER TO QUESTION 7b IS MORE THAN, EQUAL TO, OR LESS THAN THE ANSWER TO 7a)

Same ☐ 158  
 More ☐ 4  
 Fewer ☐ 121

39

- 9a. Did the AC Transit Strike cause any problems or difficulties in making your usual trip?

283

Yes ☐ 197No 78 ☐ 2 (GO TO

INSTRUCTION BEFORE 9a.)

NO ANSWER 8

39

- 8b. What kinds of problems or difficulties did you have?

197

Difficulty using another form of transportation ☐ 1 133  
 Alternative transportation too expensive . . . . ☐ 2 35  
 Too much travel time . . . . . ☐ 3 11  
 Too much congestion ☐ 4 3  
 Too inconvenient ☐ 5 19

41  
☐  
☐  
 42

(PLEASE EXPLAIN)

Other ☐ 6 3  
 (SPECIFY)

(IF ANSWER TO QU. 7b WAS "0", SKIP TO QU. 14)

9a. During the transit strike, did you use BART for this trip?

183

Yes ☐ 179 No ☐ 2 (SKIP TO QU. 9d)

43

9b. During the strike, at which BART station did you get off the train?

75

(44)

(49)

Richmond . . . . .	<input type="checkbox"/> 1 2	Fremont . . . . .	<input type="checkbox"/> 1 0
El Cerrito Del Norte . .	<input type="checkbox"/> 2 0	Union City . . . . .	<input type="checkbox"/> 2 1
El Cerrito Plaza . . . .	<input type="checkbox"/> 3 4	South Hayward . . . . .	<input type="checkbox"/> 3 0
North Berkeley . . . . .	<input type="checkbox"/> 4 0	Hayward . . . . .	<input type="checkbox"/> 4 0
Berkeley . . . . .	<input type="checkbox"/> 5 3	Bay Fair . . . . .	<input type="checkbox"/> 5 0
Ashby . . . . .	<input type="checkbox"/> 6 6	San Leandro . . . . .	<input type="checkbox"/> 6 1/2
Concord . . . . .	<input type="checkbox"/> 7 0	Coliseum . . . . .	<input type="checkbox"/> 7 4
Pleasant Hill . . . . .	<input type="checkbox"/> 8 0	Fruitvale . . . . .	<input type="checkbox"/> 8 0
Walnut Creek . . . . .	<input type="checkbox"/> 9 0	Lake Merritt . . . . .	<input type="checkbox"/> 9 5
Lafayette . . . . .	<input type="checkbox"/> 0 0	12th St. Oakland . . . .	<input type="checkbox"/> 0 10
Orinda . . . . .	<input type="checkbox"/> X 0	19th St. Oakland . . . .	<input type="checkbox"/> X 20
Rockridge . . . . .	<input type="checkbox"/> R 0	MacArthur . . . . .	<input type="checkbox"/> R 10

46

9c. What was the principle way that you got from (READ NAME FROM QU. 9b) to where you were going during the transit strike?

75

9d. How did you make this trip?

BART	(47)	107	(48) 75
Bus	<input type="checkbox"/> 1 1		<input type="checkbox"/> 1 1
Drive car alone	<input type="checkbox"/> 2 1		<input type="checkbox"/> 2 15
Driver of car with passengers	<input type="checkbox"/> 3 0		<input type="checkbox"/> 3 4
Car passenger	<input type="checkbox"/> 4 12		<input type="checkbox"/> 4 59
Taxi	<input type="checkbox"/> 5 5		<input type="checkbox"/> 5 6
Bicycle	<input type="checkbox"/> 6 0		<input type="checkbox"/> 6 2
Motorbike or Motorcycle	<input type="checkbox"/> 7 0		<input type="checkbox"/> 7 0
Walk	<input type="checkbox"/> 8 53		<input type="checkbox"/> 8 13
Hitchhike	<input type="checkbox"/> 9 2		<input type="checkbox"/> 9 7
Other	<input type="checkbox"/> 0 0		<input type="checkbox"/> 0 0

(49 - 50 open)

NO ANSWER (Specify) 1  
 (GO TO INSTRUCTION BEFORE QU. 10)

ASK QU. 10 IF ANSWER TO QUESTION 9c OR 9d WAS "DRIVE CAR ALONE" OR "DRIVER OF CAR WITH PASSENGERS")

10. Did someone else have to do without this car because you had it?

yes ☐ 1 (SKIP TO QU. 12) No ☐ (SKIP TO QU. 12)

51

5

15

(ASK QU. 11a AND 11b IF ANSWER TO QUESTION 9c OR 9d WAS "CAR PASSENGER". IF NOT CAR PASSENGER -- SKIP TO QU. 12.)

11a. Did someone have to make a special trip to drive you there? 52  
 71 Yes ☐ 1 49 No ☐ 2 21

11b. Did you belong to a car pool? 53  
 71 Yes ☐ 1 14 No ☐ 2 56  
 NO ANSWER 1

12. During the transit strike, how much time did a one-way trip usually take from where you started to your final destination? (54 open)  
 183

Less than 10 minutes . . . ☐ 1 12 40 - 49 minutes . . . . . ☐ 5 11  
 10 - 19 minutes . . . . . ☐ 2 40 50 - 59 minutes . . . . . ☐ 6 5 55  
 20 - 29 minutes . . . . . ☐ 3 38 1 hr. to 1-1/2 hrs. . . . . ☐ 7 26  
 30 - 39 minutes . . . . . ☐ 4 38 More than 1-1/2 hrs. . . . . ☐ 8 9

13. How much did this same one-way trip cost you during the transit strike? (IF CAR DRIVER, ASK FOR OUT OF POCKET COSTS-- GAS, PARKING, AND TOLLS.)  
 183

0 - 24 cents . . . . . ☐ 1 44 \$1.00 - \$1.49 . . . . . ☐ 5 17  
 25 - 49 cents . . . . . ☐ 2 55 \$1.50 - \$1.99 . . . . . ☐ 6 9 56  
 50 - 74 cents . . . . . ☐ 3 22 \$2.00 - \$2.50 . . . . . ☐ 7 12  
 75 - 99 cents . . . . . ☐ 4 6 More than \$2.50 . . . . . ☐ 8 12  
 NO ANSWER 6

In order to analyze the data you have given us, we also need some information about you and your family.

14. What is your age? (57 - 62 open)  
 334 Under 18 . . . . . ☐ 1 31 45 - 54 . . . . . ☐ 5 43  
 18 - 24 . . . . . ☐ 2 97 55 - 64 . . . . . ☐ 6 30 63  
 25 - 34 . . . . . ☐ 3 55 65 or over . . . . . ☐ 7 42  
 35 - 44 . . . . . ☐ 4 35 NO ANSWER 1

15. Do you have a valid driver's license?  
 334 Yes ☐ 1 133 No ☐ 2 (SKIP TO QU. 17) 64  
 201

16a. How many motor vehicles, if any, are there in your household?  
 133 21 ☐ 0 (SKIP TO QU. 17) 35 ☐ 2 65  
 63 ☐ 1 14 ☐ 3 (or more)

16b. How much would it inconvenience your household if you used that (one of these) vehicle(s) to make this trip? (READ ALTERNATIVES)  
 112  
 Very inconvenient . . . . . ☐ 1 41  
 Somewhat inconvenient . . . . . ☐ 2 22 66  
 Not very inconvenient . . . . . ☐ 3 8  
 Not at all inconvenient . . . . . ☐ 4 41

17. What is the approximate range of your total family income?  
(SHOW CARD)

A. Under \$5,000 . . . . . ☐ 1 07 D. \$10,000 - \$14,999 . ☐ 4 48

B. \$5,000 - \$6,999 . . . . . ☐ 2 59 E. \$15,000 - \$24,999 . ☐ 5 30

C. \$7,000 - \$9,999 . . . . . ☐ 3 53 F. \$25,000 or more . . ☐ 6 7

67

NO ANSWER 30

Thank you very much for your interest and cooperation !

Time Interview Ended (NOT TABULATED) AM/PM

(INTERVIEWER: PLEASE RECORD)

EC: W1 SA2 B3 O4

68

S: M1 F2

69

Location: A1 B2 C3 D4 E5 F6

70

(71 - 79 open)

☐ 1

80

ETHNIC IDENTIFICATION

white	136
spanish american	14
black	178
oriental	6

GENDER

male	101
female	233







